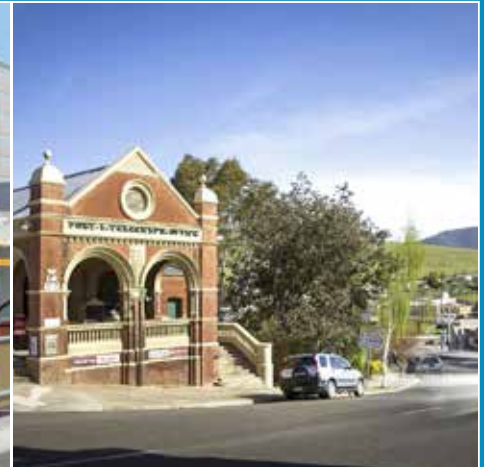
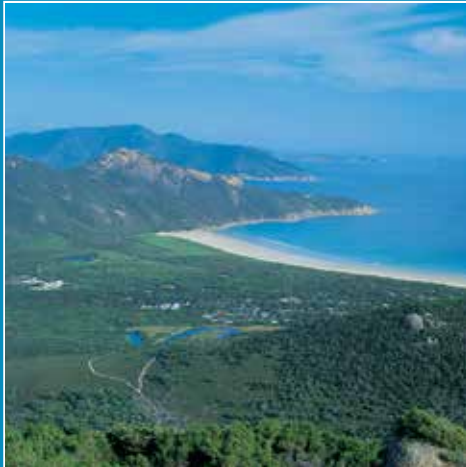


GIPPSLAND REGIONAL GROWTH PLAN



Acknowledgement of Country

The Gippsland Local Government Network and the Department of Transport, Planning and Local Infrastructure acknowledge Aboriginal Traditional Owners within the region, their rich culture and spiritual connection to Country. We also recognise and acknowledge the contribution and interest of Aboriginal people and organisations in land use planning, land management and natural resource management.

Note: The Gippsland Local Government Network (GLGN) is an alliance of six councils: Bass Coast Shire Council, Baw Baw Shire Council, East Gippsland Shire Council, Latrobe City Council, South Gippsland Shire Council and Wellington Shire Council.

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May 2014

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EXECUTIVE SUMMARY

Gippsland has always been an important driver of the Victorian and Australian economies because of its vital role in supplying energy, earth resources, water and food. It also comprises nationally recognised tourist destinations and some of the state's most important environmental and cultural heritage assets. The Gippsland Regional Growth Plan will leverage off these regional assets to help create a healthy and thriving community, which is supported by a vibrant and diverse economy.

While the Gippsland region has valuable assets that underpin its future, it is facing a period of change. Energy production needs to transition to a low carbon platform, new oil and gas fields need to be explored, and cleaner and greener value-adding opportunities are needed in natural resource and food production. Climate change will provide both challenges and opportunities for agriculture and place pressure on some coastal areas. There will also be a need to manage increased risks from flood, bushfire, coastal hazards and rising sea levels. The region's growing population needs to be accommodated, with a need for more housing choices, services and infrastructure.

This plan addresses a wide range of challenges by recognising Gippsland's assets of regional significance and putting an integrated planning framework in place to direct and manage sustainable growth across the region. It establishes regional policy to guide the use and preservation of these assets and provides a higher level of certainty and direction for investors, infrastructure and service providers, the community and decision makers.

To grow and diversify Gippsland's economy, and take advantage of value-adding opportunities within the region, efforts should be focused on the sectors of energy and earth resources, agriculture, forestry, fisheries, commercial and industrial development, and construction.

Opportunities for strong employment growth are provided in the areas of tourism, knowledge and green industry sectors such as sustainable and renewable technologies, and the service sector. Areas of strategic significance are identified for both agriculture and tourism to support the region's aspirations to be an important contributor to the state's agriculture and food production for Australia and Asia, and to increase employment in nature-based tourism.

Gippsland is forecast to become a fast growing part of Victoria as more people relocate to the region from Melbourne. This plan considers the implications of growing the region to a population of 386,000 by 2041, an increase of 116,000 people. Significant new investment in the region, particularly efforts to develop clean and renewable energy and to foster supporting research and advanced manufacturing sectors could help attract a higher population of up to 465,000 by 2041. This upper range figure envisages that Latrobe City, as the regional city, comprising Moe, Morwell, Traralgon and Churchill, has the capacity to accommodate this level of population and economic growth.

A network of important regional centres comprising Bairnsdale, Leongatha, Sale, Warragul and Wonthaggi and neighbouring towns will benefit from high amenity, affordable housing and growing employment opportunities and distribute these benefits across the region. This approach will stimulate stronger economic growth, attract high level services and provide efficiencies in meeting community needs. *Plan Melbourne* (Chapter 6 – State of Cities) identifies Warragul/Drouin, Wonthaggi and Leongatha as peri-urban towns with potential to attract housing and population growth out of Melbourne. It is likely that demand for housing in these centres would be accelerated in the future with the imposition of a permanent growth boundary around Melbourne.

EXECUTIVE SUMMARY

Economic development and future settlement patterns are planned to take advantage of existing infrastructure, servicing investment and capacity to reduce increased risks in places prone to natural hazards. Significant road and rail networks are identified to support Gippsland's growth and provide better access to and from markets and services within and beyond the region.

This plan identifies Gippsland's key assets and responds positively to the challenges that lie ahead. It adopts an integrated approach with a package of objectives and strategies for the economy, environment, regional living, infrastructure and transport.

This plan is underpinned by four guiding principles with key objectives as follows:

Principle 1: Strengthen economic resilience by growing a more diverse economy that is supported by new investment, innovation and value-adding in traditional strengths

- Facilitate vibrant and prosperous commercial centres in the region's major urban centres that respond to changing population and market conditions
- Further diversify Gippsland's service and manufacturing industries and support those that have the greatest impact on job and investment generation, and those that add value to local products
- Advance productive and innovative agriculture, forestry and fisheries sectors with a focus on export markets and local food processing
- Strengthen the energy sector and identify, protect, extract and process valued earth resources such as brown coal, oil and gas, and sand and rock subject to best practice environmental standards
- Facilitate the rejuvenation, expansion and development of regional tourism based on Gippsland's environmental and cultural heritage assets and identified strategic tourism investment areas

Principle 2: Promote a healthy environment by valuing Gippsland's environmental and heritage assets, and by minimising the region's exposure to natural hazards and risks

- Manage risks to Gippsland's communities and economy from natural hazards
- Manage Gippsland's environmental and heritage assets to achieve the best outcomes for the region's environment, economy and community
- Plan for potential impacts and opportunities arising from climate change and initiatives to reduce greenhouse gas emissions

Principle 3: Develop sustainable communities through a settlement framework comprising major urban centres that ensures residents have convenient access to jobs, services, infrastructure, and community facilities

- Promote the sustainable growth and development of Gippsland through an identified network of settlements
- Develop settlements that have a strong identity, value their natural and cultural heritage, and are prosperous and environmentally sustainable

Principle 4: Deliver timely and accessible infrastructure to meet regional needs for transport, utilities and community facilities

- Work with utility and service agencies to optimise access to gas, electricity, drainage, water, sewerage and telecommunications and cater for a growing population and economy across the region
- Support road, rail and port improvements across Gippsland and beyond, particularly to markets and employment
- Provide health, education, cultural and sporting facilities to meet local needs in locations that are accessible and convenient to the people who will use them

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 (refer to Map 1). 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 regional growth plans respond to directions established in the regional strategic plans that were prepared across regional Victoria between 2007 and 2010.

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 provides 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.

PART A | INTRODUCTION

Map 1: The eight regional growth plans



Source: Department of Transport, Planning and Local Infrastructure

2. Why we need this plan

The Gippsland Regional Growth Plan translates and integrates emerging statewide regional land use planning policy. It provides the basis for regional coordination and future planning of infrastructure to support regional land use objectives.

The plan:

- supports the priorities of the Gippsland Regional Plan particularly to provide further direction for land use related priorities, including:
 - Gippsland Low Carbon Economy Transition Plan
 - post-secondary education
 - Gippsland's gateways
 - Centre for Sustainable Technologies
 - Gippsland Lakes Sustainable Development Framework
 - Gippsland's water
 - tourism infrastructure
- establishes a framework for strategic land use and settlement planning that can sustainably accommodate growth
- identifies important economic, environmental, social and cultural resources to be protected, 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 preserved
- identifies opportunities for supporting regional level infrastructure, providing an essential contribution to the long-term sustainability of the region.

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

The plan 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. It is not at a level where service planning or specific unquantified infrastructure could be committed. The 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 this plan.

The plan provides solutions to common issues across Gippsland but will not reduce attention to local issues or replace local planning, such as identification of future industrial and other employment locations or consistent regional approaches to planning for key resources, waste, tourism and heritage.

3. How this plan will be used

This plan supports the region's agreed priorities as set out in the Gippsland Regional Plan. The plan provides a land use focus for economic, environmental, settlement and infrastructure priorities, and will be used to inform regional planning policy and guide future strategic planning by local government.

This plan will guide and inform future land use planning across the Gippsland region, including subsequent reviews of each council's Municipal Strategic Statement.

The key land use planning directions of the plan will be implemented through the state planning system as it is applied by each council in the Gippsland 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.

4. How the plan was prepared

The plan has been developed through a series of issues papers, regional workshops and analysis of information provided by all partners in the process. Partners in the development of the plan are: Baw Baw Shire, Bass Coast Shire, East Gippsland Shire, Latrobe City, South Gippsland Shire, Wellington Shire, Gippsland Regional Development Australia Committee, Gippsland's catchment management authorities, Department of Environment and Primary Industries, VicRoads, Department of Transport, Planning and Local Infrastructure and Department of State Development, Business and Industry.

The process for preparing the plan was as follows:

1. Project establishment
2. Prepare background issues paper
3. Establish the plan's strategic directions – Public consultation
4. Prepare draft regional growth plan – Public consultation
5. Prepare final regional growth plan

A brochure identifying draft strategic directions for the plan was on display on the Department of Transport, Planning and Local Infrastructure website www.dtpli.vic.gov.au/regionalgrowthplans. Background and issues papers are also available on this website.

5. Components of this plan

Part A: Introduction – provides an overview of the context of this plan and how it is being prepared.

Part B: Regional overview – considers the current drivers of change in the Gippsland region as well as wider challenges such as economic restructuring, technological change, and the projected impacts of climate change. These drivers and challenges set a context for land use and development issues across the region and provide a focus for where more detailed investigation and planning may be needed.

Part C: Towards the regional growth plan — Regional land use framework – recognises the role of the economy and the region's economic assets and the need to build on these competitive advantages and opportunities to create a more diverse and resilient economic future. The region's environmental and cultural heritage assets are recognised as providing vital ecosystem services and economic value through activities such as tourism. A regional settlement framework sets out a high level approach to accommodate the region's projected population and household growth. The plan also considers existing infrastructure networks and servicing implications for future growth.

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

Part E: Delivering regional growth – outlines how the plan will be implemented and progress monitored. A summary of key directions for future growth and actions for implementation is provided.

The plan is supported by:

- Gippsland Regional Plan
- Gippsland Regional Growth Plan – Issues Paper
- Gippsland Regional Growth Plan – Strategic Directions Consultation Summary
- Gippsland Regional Growth Plan – Background Report
- Gippsland Region Profile (Regional Development Victoria)

PART B | REGIONAL OVERVIEW

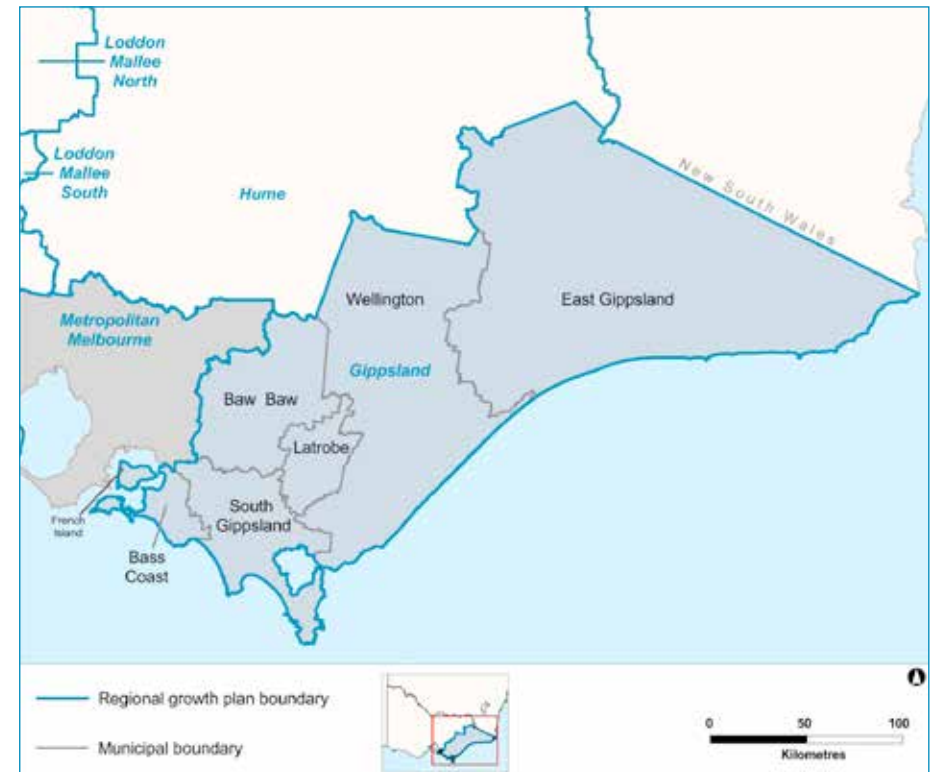
This part of the Gippsland Regional Growth Plan provides a broad overview of the Gippsland region including what is driving growth and change, what land use challenges the region faces, and a proposed vision statement outlining a desired future.

6. Snapshot of the region

The Gippsland region extends from the edge of metropolitan Melbourne in the west to the most easterly point of Victoria. In the north, the region borders New South Wales and the Hume region. The region's southern border is defined by the Victorian coastline. Gippsland includes the local government areas of Bass Coast, Baw Baw, East Gippsland, Latrobe, South Gippsland and Wellington (as shown on Map 2). Planning functions and land management for French Island are a state government responsibility.

Gippsland's economy is predominantly based around natural resources and commodities, with key industry sectors including agriculture, forestry, dairy and pastoral industries, fishing, and coal mining, oil and gas extraction and processing. The agribusiness sector is a significant employer in the region, with over 37 per cent of Gippsland's business involved in agriculture and fishing and a further 15 per cent involved in upstream processing operations. Energy production is one of Gippsland's major industries, both in the coal-rich Latrobe Valley and Bass Strait's oil and gas fields serviced from Longford. The region produces around 90 per cent of Victoria's electricity, 97 per cent of Victoria's natural gas, and 14 per cent of Australia's oil. The region's strategic assets are shown on Map 3.

Map 2: Gippsland region



Source: Department of Transport, Planning and Local Infrastructure

PART B | REGIONAL OVERVIEW

Table 1: *Gippsland fast facts*

Current population	269,790
Projected population in 2041*	386,000
Number of jobs currently within the region	89,386
Proportion of land in the Gippsland region made up of state-owned forests, national parks and reserves, and native freehold forests	67%
Supply of Melbourne's water needs	60%
Percentage of Victoria's electricity generated in Gippsland in 2010	90%
Percentage of Victoria's natural gas extracted from Gippsland	97%
Percentage of Australia's oil extracted from Gippsland**	14%
Percentage of Victoria's beef produced in Gippsland	25%
Percentage of Australia's milk produced in Gippsland	20%
Percentage of Victoria's agricultural, forestry and fishing exports contributed by Gippsland	29%
Percentage of Gippsland business involved in agriculture and fishing	37%
Percentage of Gippsland business involved in agriculture and fishing processing operations	15%

* DPCD population projections (unpublished) 2012

** Geoscience Australia (2012) Production and Development Table 2 - Crude Oil and Gas Production by Basin, pre 2001 and 2001-2010 release 24 February 2012.

Source of other facts: Regional Development Victoria (2013) Gippsland Economic Profile

Gippsland's settlement patterns are well established with the Latrobe Valley corridor forming the major economic and population centre of the region. Latrobe City, as Gippsland's regional city, consisting of Moe, Morwell, Traralgon and Churchill, is seen as a collective urban system or networked city. The regional centres of Bairnsdale, Sale, and Warragul/Drouin are located along the Princes Highway. The regional centres of Leongatha and Wonthaggi, and the townships of Korumburra and Inverloch lie along the Bass and South Gippsland highways. Cowes (Phillip Island), Lakes Entrance, Orbost, Maffra and San Remo are also significant settlement locations.

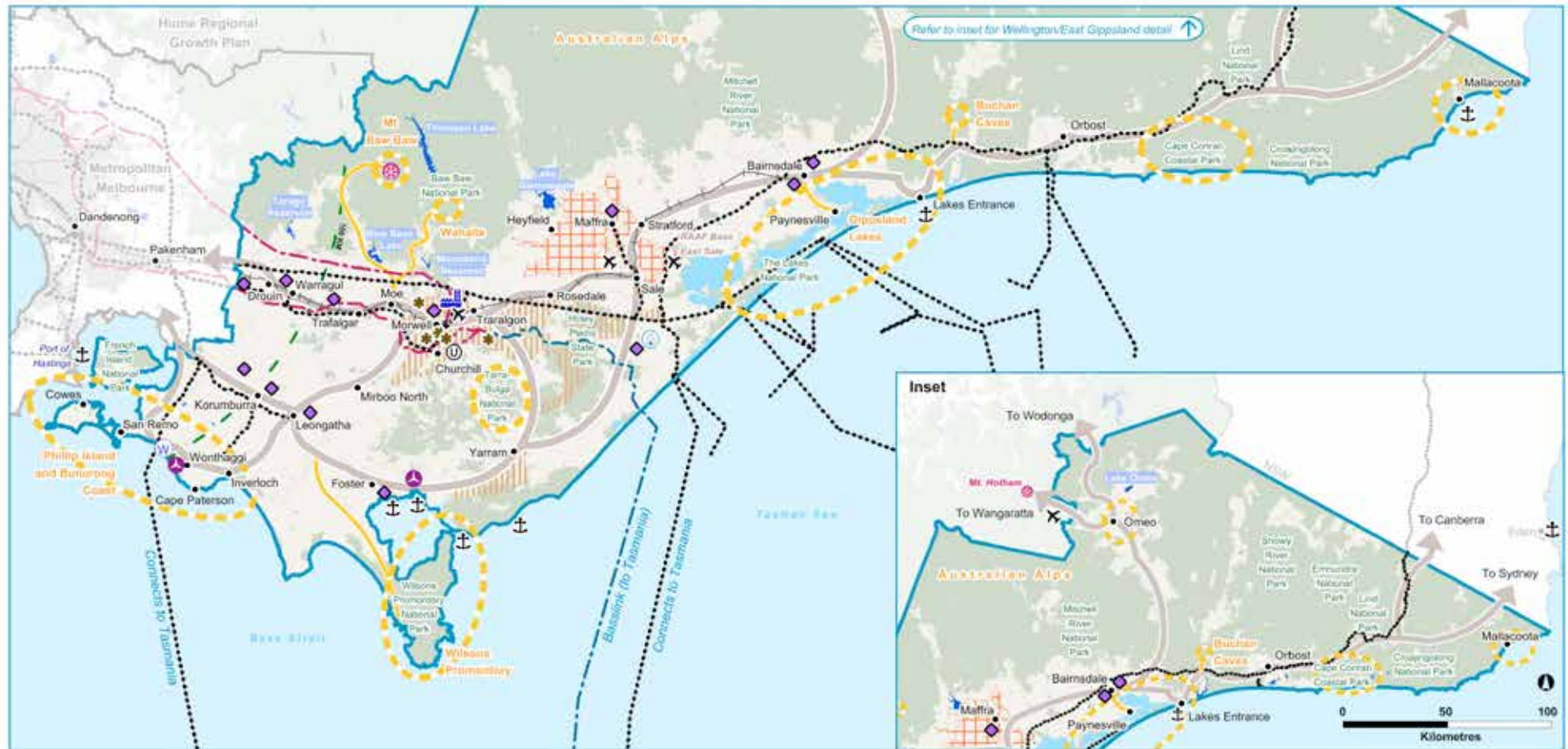
A scattering of smaller towns provide important district servicing roles and tourist destinations including those in the high plains, historic gold mining areas and alpine scenic routes. The Gippsland region's projected population over the next 20 years is shown in Table 2.

Table 2: *Local government areas projected population*

Local Government Area	Total Population		
	2011	2021	2031
Bass Coast (Shire)	32,056	40,037	49,946
Baw Baw (Shire)	44,042	54,439	64,608
East Gippsland (Shire)	44,680	51,149	58,808
Latrobe (City)	76,640	83,531	90,741
South Gippsland (Shire)	28,452	30,187	32,509
Wellington (Shire)	43,920	46,013	49,276
Total for Gippsland region:	269,790	305,356	345,888

Source: Victoria in Future 2012

Map 3: Gippsland strategic assets



Source: Department of Transport, Planning and Local Infrastructure



PART B | REGIONAL OVERVIEW

While Gippsland has some clearly defined centres, around 40 per cent of the population is located in villages and settlements of less than 500 people. Along the coastline many areas are subject to significant seasonal population fluctuations. The region is unique in Victoria with approximately three-quarters of the region being forested public lands and national parks, natural water courses and floodplains, and areas of bushland with bushfire risk. This provides a unique natural landscape with a range of tourism opportunities, yet significant challenges in terms of disconnection between communities.

Transport links in Gippsland are largely orientated east-west, with the Princes Highway and Bairnsdale rail line defining the principal corridor connecting most of the major settlements. North-south movement in Gippsland is facilitated by the South Gippsland, Bass and Strzelecki highways. Rail transport includes V/Line passenger trains and freight that link to and beyond Melbourne and its ports. Plans to invest in the Port of Hastings as a major port equal to the Port of Melbourne have been identified by regional stakeholders as a major potential driver for regional growth. This will require upgrades to both rail and road connections and planning for future transport corridors.

The Gippsland region has important economic connections and linkages to export ports in Melbourne and New South Wales. The export of dairy and food products, timber and paper, and livestock to national and global markets generates significant value for the region and underlines the importance of reliable access to markets. Key linkages outside the region are shown on Map 4.

A strong tourism industry operates in Gippsland, which is linked to the environmental assets of the region and its unique and diverse cultural landscapes. This industry attracts a growing market from metropolitan Melbourne and local residents, and has significant potential to broaden its appeal. Some key tourism assets include the Gippsland Lakes, Phillip Island, Wilsons Promontory, far east Gippsland and the alpine country. Popular tourist destinations include Phillip Island, Walhalla, Gippsland Lakes and coast, the Baw Baw plateau, and the Strzelecki Ranges.

Map 4: Links to surrounding regions



7. Drivers of change

Issues such as changes in climate, economic restructuring, global economic conditions and commodity prices, and changing demographic profiles are affecting communities across regional Victoria to varying degrees. In Gippsland these issues are driving significant change in the region's economy, particularly due to its strong reliance on natural resources and coal. The region's coastline and large extent of forested public land are at risk from natural hazards and the potential impacts of changes in climate. In central and eastern parts of the region, a projected ageing population will present challenges for housing, health and support services, and accessible transport.

At the western interface with Melbourne, (Melbourne's peri-urban hinterland) and adjoining the Casey and Cardinia growth areas, considerable growth is occurring in Warragul/Drouin and Wonthaggi, with new residents settling within commuting distance to metropolitan workplaces. Bairnsdale and other locations near the Gippsland Lakes are expected to experience significant population growth influenced by amenity and lifestyle opportunities.

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 Gippsland region it extends across parts of the Baw Baw, Bass Coast and South Gippsland shires from the south-eastern fringe of metropolitan Melbourne.

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 Section 1.1 of the background report). 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.

The proximity of the peri-urban region to Melbourne and high standard road and rail infrastructure reinforce 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 Gippsland region,

Warragul/Drouin, Korumburra and Wonthaggi have been identified as key peri-urban growth 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 there are trade-offs between competing land uses.

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, provides a strong foundation for preparation of statements about the peri-urban region.

Economic diversification and increasing resilience

Gippsland has significant natural and economic assets related to energy, water and agriculture. There has been moderate growth in the region's largest industry sectors (manufacturing, mining, utilities and agriculture) over the last 10 years. Conversely, sectors that have grown strongly, professional and financial services and construction, are relatively small. The region will need to move to a more diverse economy with increased processing and value-adding of its natural resources and produce to increase economic resilience and better position the region to adjust to future change. There is also a need to further develop the service and knowledge industry and optimise regional benefits from the National Broadband Network.

Gippsland's reliance on the economic value of brown coal has been affected by national and global initiatives to reduce greenhouse gas emissions. The region will need to invest in innovation and technology to realise opportunities for alternative use of its brown coal resource based on clean coal technology, carbon capture and storage, and other products derived from brown coal such as liquid fuels, fertilisers and solid fuels.

Opportunities have been identified to build on existing capabilities in research and food processing to further enhance Gippsland's agriculture sector. There is potential to harvest farm and forestry waste as biomass for use in the production of biofuels. The region can also build on its manufacturing capabilities, particularly in aircraft manufacturing and other technical industries, and can further develop its tourism industry by building on opportunities from environmental assets such as the Gippsland Lakes, Wilsons Promontory, the Australian Alps and Phillip Island.

It will be important to ensure an adequate supply of land for urban growth, including industrial and employment areas, and to ensure that infrastructure has the capacity to support and attract new investment across existing and emerging industry sectors.

State initiatives such as the Latrobe Valley Industry and Employment Roadmap and regional projects, such as the Gippsland Food Plan, outline further actions to realise these opportunities.

Population growth

Current projections indicate that by 2041 the Gippsland region is expected to grow by 116,000 to reach a total population of 386,000 (Victoria in Future, 2012 population projections, unpublished, 2012). The projected growth rate of 1.19 per cent per annum is similar to other growth rates across regional Victoria, but is higher than historical rates of growth for the region (one per cent growth rate achieved since 1996). The total number of additional people will be significantly higher than the 60,000 people added to the region over the previous 30 years.

PART B | REGIONAL OVERVIEW

Population growth will not occur evenly across the region, with most of the region's growth focused on Traralgon, Bairnsdale, Wonthaggi, Warragul and Drouin. Places closest to Melbourne are expected to grow fastest with Bass Coast and Baw Baw shires forecast to grow by 2.2 per cent and 1.7 per cent, respectively, with their population driven by the continuing growth of Melbourne's south east and development of the Cardinia Employment Corridor. Higher growth rates can generate employment and economic benefits but can also create pressure on infrastructure such as roads, trains, water and sewerage and some communities may be resistant to such growth.

Some areas such as small and remote settlements will experience only slow or stable growth. In these areas, planning will need to focus on how these communities can retain and improve access to necessary health, education and commercial services. Flexible and adaptable service delivery, community transport and mobile services such as bush nursing centres will be part of the response needed to maintain service levels for small and remote communities.

An ageing population

Similar to much of regional Victoria, Gippsland's population is projected to age over the next 30 years. The proportion of people aged 65 or over is forecast to increase from 18 per cent to 30 per cent over the next 30 years compared to 12 per cent of the population in 1996. This has implications for health and social services as well as leisure and cultural services. There are also implications for housing preferences, with 84 per cent of future household growth to be from households with one person or couples without children. The local government areas of East Gippsland, Bass Coast and South Gippsland are forecast to have particularly high levels of people aged 65 and over. A related challenge for the region is to attract and retain younger people who leave the region for education and employment opportunities in Melbourne.

Natural hazards and climate change

Significant areas of Gippsland are at risk from natural hazards including flood, bushfire and sea level rise. There is the potential for loss of property and life where settlement and infrastructure intersect with high risk areas. There are particular challenges for small and remote communities in avoiding natural hazards and building resilience and capacity to respond to emergencies, as well as providing for suitable development around the fringes of some larger settlements. Transport and communication networks will be increasingly important as part of the management and response to natural hazards and extreme events.

Climate change projections for Victoria are for temperature increases within the range of 0.6°C to 1.3°C by 2030 (relative to 1990) and between 1°C and 4.2°C by 2070 (depending on the amount of carbon in the atmosphere). Average rainfall is likely to decrease, mainly in winter, although there is still likely to be multi-year wet periods. A sea level rise of 0.5–1.1 metres is possible by 2100 and it is anticipated that by 2050, areas that experience at least one day of snow cover will be reduced by around 22 per cent. An increased risk of extreme weather events and natural hazards is predicted such as flood, coastal erosion, storm tide events and bushfire. There is also the potential over the next 30 years for negative implications on coastal and inland settlements, infrastructure, tourism, human health and water supply.

Opportunities may arise over the next 30 years and beyond in the Gippsland region from these long-term changes in climate. These opportunities may include growth of new agricultural crops, an expanded timber industry due to the developing carbon market, the production of new products to help adapt to climate change, such as climate resilient building products, and an increase in fisheries production.

Transport and communications

While Gippsland has a functional transport network consisting of highways and the Bairnsdale railway corridor, the network will be under pressure in the years ahead with population and economic growth. Communities across the region will need reliable and efficient access to regional services such as hospitals and tertiary education. Industries based on agriculture and coal products will need improved access to Melbourne and export markets with links to ports.

It will be important to ensure Gippsland's transport network keeps pace with growing passenger numbers and changes in the freight task. Sound transport and communication links to Melbourne and its airports, with interstate and international connections, will be needed as Gippsland's knowledge and service industries grow.

8. Challenges for growth

Challenges for growth in the Gippsland region, which this plan seeks to address, are summarised as:

- sustaining and expanding economic activity through a period of diversification and transition
- enhancing the resilience of the region's industries to the impacts of economic restructuring and climate change
- identifying new and improving existing tourism opportunities in the region
- accommodating projected population and household growth, including managing settlement growth with consideration of economic resources, environmental assets and natural hazards
- managing the impacts of a changing community profile including an increasingly aged population
- planning and adapting settlements and infrastructure to respond to the impacts of climate change, including increased risk from natural hazards
- improving the efficiency, reliability and service levels of the region's transport network to provide access to markets, services and employment
- delivering services and communications infrastructure to meet the needs of the community, commercial and industrial users.

9. Vision for the region

By 2041 Gippsland is recognised as having attracted remarkable levels of investment in economic and urban growth through implementation of regional strategies and projects, inspired by the region's assets and its potential.

Growth has been planned for, and attracted to, six urban centres: Latrobe City as the regional city, Bairnsdale, Leongatha, Sale, Warragul/Drouin and Wonthaggi. This approach has attracted and retained higher than projected population and employment levels as the centres have gained the critical mass to provide higher order services.

Economic growth has been sustained by the region's traditional strengths in natural resources, energy, agriculture and forestry, manufacturing and tourism. Investment in research and development in these and other industries has spurred on the development of new industries and higher employment rates and resulted in Gippsland having a reputation for innovative technology. Promotion of the region's nature-based and cultural heritage tourism assets has also attracted new investment in world-class facilities and significant increases in visitor numbers.

Careful planning of both urban and rural areas has added to the region's valued rural and regional character and protected and replenished its environment. Ecologically sustainable development practices and the facilitation of a healthy lifestyle are now entrenched in planning practices and community values.

The region's private and public transport connections between towns, ports, markets, Melbourne and interstate operate efficiently to accommodate new demand.

10. Principles to achieve the vision

A set of guiding principles to achieve the vision has been developed with the participation of the project partners. These principles reflect the priorities and directions of the Gippsland Regional Plan 2010.

Principle 1: Strengthen economic resilience by growing a more diverse economy, that is supported by new investment, innovation, and value-adding in traditional strengths

The plan will support a diversified economy, building on the region's traditional strengths of energy, earth resources, agriculture, forestry, fisheries, commercial and industrial development, tourism and the service sector. The plan provides policy support for value-adding opportunities and employment growth in healthcare and social services, green jobs and knowledge industries. Focusing urban growth in the regional city, as well as in a network of regional centres, will boost population mass and concentrate services and businesses in a manner that is conducive to increased investment and employment.

Principle 2: Promote a healthy environment by valuing Gippsland's environmental and heritage assets and by minimising the region's exposure to natural hazards and risks

Distinctive rural landscapes and sensitive environments such as the coast, mountain ranges and natural bushland will be protected and valued. Urban and economic development will be managed so as to minimise adverse impacts on these environmental and cultural heritage assets, and will be directed to areas of lower risk from bushfire, flood and other natural hazards.

Principle 3: Develop sustainable communities through a settlement framework comprising major urban centres, that ensure residents have convenient access to jobs, services, infrastructure and community facilities

The plan introduces a settlement framework for urban growth that builds on the existing network of main towns. The regional city is centrally located and has the scale and range of services needed to provide benefits across the region. The regional centres of Warragul, Leongatha, Wonthaggi, Bairnsdale and Sale, and a network of smaller nearby towns including Drouin, Korumburra, Inverloch, Paynesville, Maffra and Stratford, will distribute growth and access to services across the Gippsland region. The importance of district and smaller towns is acknowledged. Urban growth will be coordinated to encourage services and housing stock that better meet the needs of a changing population and the projected increase in smaller households.

Principle 4: Deliver timely and accessible infrastructure to meet regional needs for transport, utilities and community facilities

The plan recognises the importance of road and public transport and promotes initiatives to improve access within the region and to markets and services in Melbourne and beyond. Urban development will be directed to places with existing capacity in services and infrastructure such as water, sewerage, electricity, roads and public transport, and where additional servicing can be accommodated in an economically efficient manner. Regional services such as hospitals, tertiary education, sports and cultural facilities will be focused across the network of major centres.

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

11. Regional economy

Future directions

- Facilitate vibrant and prosperous commercial centres in the region's major urban centres that respond to changing population and market conditions
- Further diversify Gippsland's service and manufacturing industries to support job creation and investment, and value-add to local products
- Advance productive and innovative agriculture, forestry and fisheries sectors with a focus on export markets and local food processing
- Strengthen the energy sector, subject to best practice environmental standards, and identify, protect, extract and process valued earth resources such as brown coal, oil and gas, and sand and rock
- Facilitate the rejuvenation, expansion and development of regional tourism based on Gippsland's environmental and cultural heritage assets and identified strategic tourism investment areas

The Gippsland region's economy is predominantly driven by its abundant natural resources such as productive agricultural land and earth resources including coal, sand, gas and oil. In addition, the region's extensive coastline, waterways, national parks, cultural heritage places and unique wildlife experiences, such as the Phillip Island penguins, support a significant tourism industry.

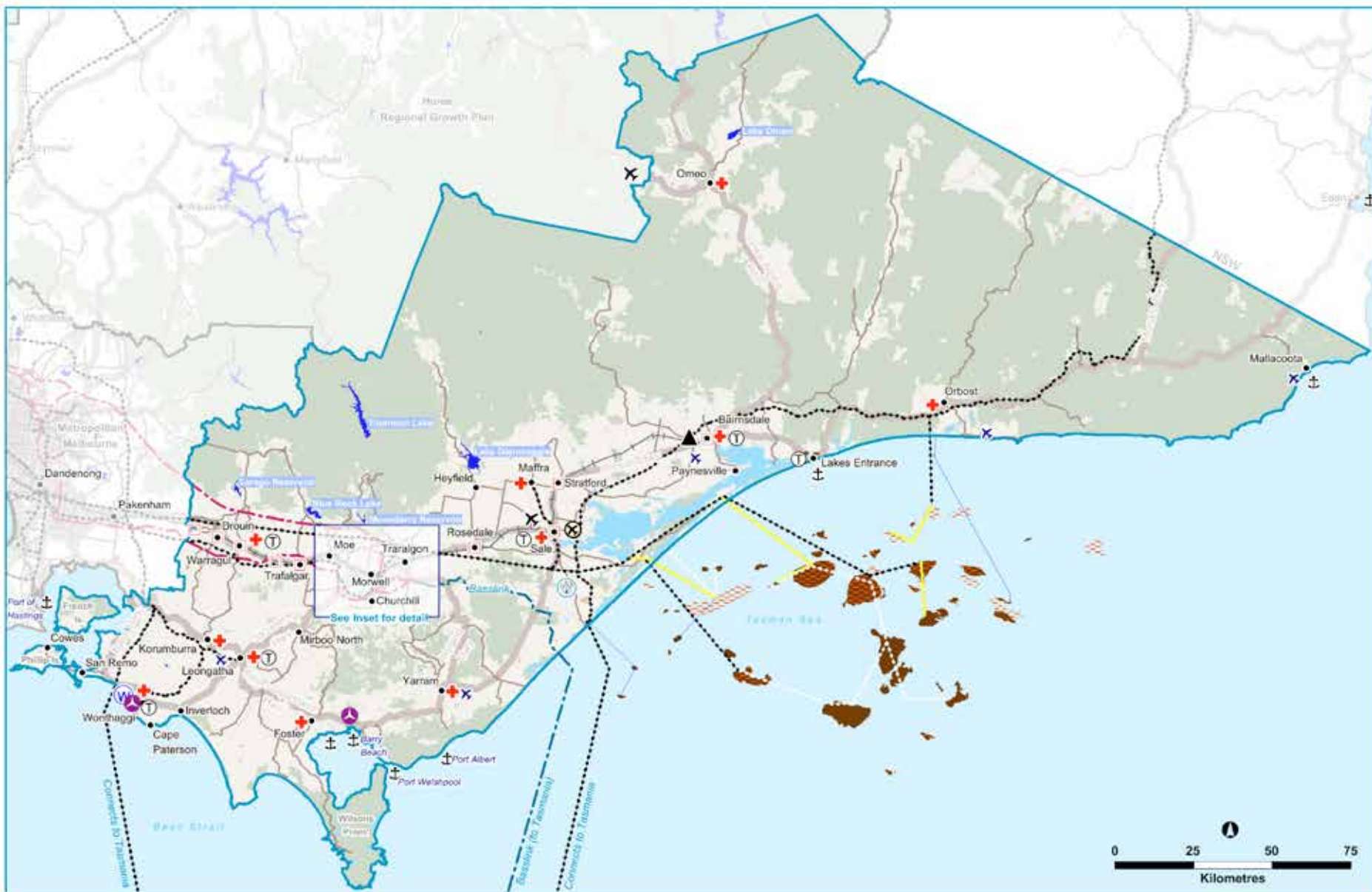
Dairy, meat production, horticulture and forestry generate significant wealth and employment both through primary production and through associated processing and manufacturing. Energy, gas, water, mining, construction and defence are other key sectors that drive the Gippsland economy and create significant benefits for employment, exports and wealth creation. Retail trade, healthcare, education and social assistance are also important regional sectors and are expected to remain strong into the future.

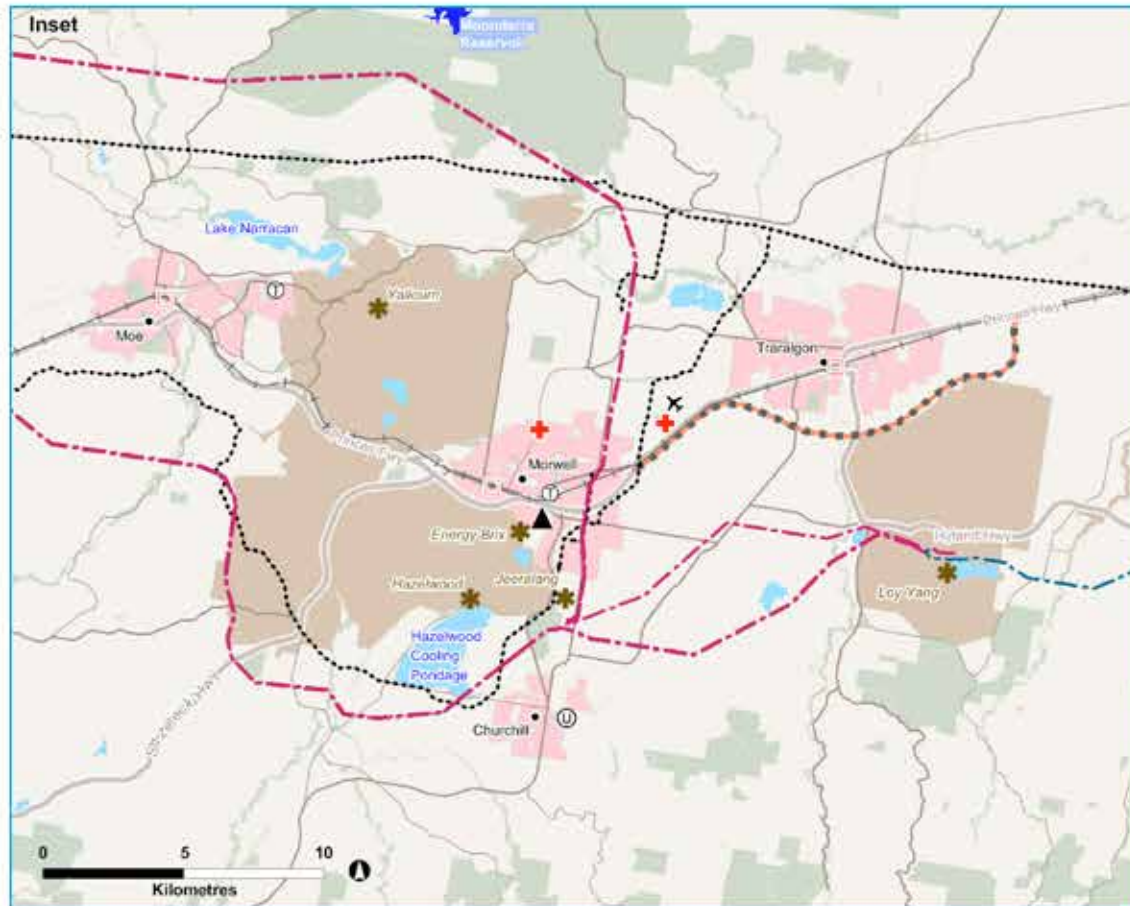
Significantly, Gippsland's natural resources help underpin the wider Victorian economy through reliable power generation. The region's brown coal resources and energy infrastructure produce around 90 per cent of the state's electricity. In addition, the Thomson Reservoir is fundamental to Melbourne's water security. Gippsland also supplies about 32 per cent of Victoria's milk, 25 per cent of its beef and 14 per cent of its fruit and vegetables. Tourist attractions such as Gippsland Lakes, Wilsons Promontory, Phillip Island and the Australian Alps are important components of the state's tourism offer.

However, climate change and the introduction of initiatives to reduce greenhouse gas emissions will have major implications for the Gippsland economy given the size of its mining and power generation sectors. Gippsland will need to move to a low-carbon economy and diversify its economic activities. The region is in a position to take advantage of its existing assets and resources in energy and agriculture at the same time as growing other sectors of the economy to broaden employment opportunities. The region contains significant infrastructure as identified on Map 5.

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Map 5: Infrastructure





Source: Department of Transport, Planning and Local Infrastructure

Energy

- Operational wind farm
- Power station
- Longford gas plant
- Coal mine and environs
- Gas reserve
- Oil reserve
- Gas pipeline
- Oil pipeline
- Gas/Oil pipeline
- Other pipeline
- Electricity transmission line (500 kV)
- Basslink (500 kV)

Transport

- RAAF Base East Sale
- Airport
- Aerodrome
- Port
- Potential intermodal freight terminal
- Highway
- Arterial road
- Traralgon bypass acquisition corridor
- Active railway line and station

Features

- Settlement
- Hospital
- University
- TAFE
- Existing urban land
- Melbourne's urban area
- Victorian Desalination Plant
- Designated water supply
- Lakes
- Public land

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New industries are being explored that build on the region's competitive strengths, particularly opportunities in coal research and technology such as more sustainable energy and carbon capture and storage. Other opportunities include advanced manufacturing, intensive agriculture and food processing, and tourism. Growth is also projected in the service sectors including health and social assistance, professional and technical services, and finance services.

The diverse range of opportunities for the region is shown on Map 6: Future directions for the economy.

In the agriculture sector, new ways of maximising food and processing capabilities are being explored through food manufacturing and by using agricultural by-products for biofuels and bioenergy. Growth in food manufacturing will depend on a reliable source of high quality agricultural product supported by a secure water supply and access to local processors and export markets. The impacts of climate change will need to be monitored and producers may need support in adapting their farm operations.

The Gippsland region's access to markets is largely dependent on its linkages to Melbourne and transport hubs such as the Port of Melbourne and Melbourne Airport. Road and rail improvements that facilitate increased freight access to Melbourne's distribution and export hubs will enhance the competitiveness of Gippsland's agricultural and manufacturing sectors, while the expansion of the Port of Hastings as an export facility will open up further opportunities for economic growth.

The region's wide variety of environmental and cultural heritage assets offers an opportunity for major growth in tourism, sustained by a growing local population, Melbourne's ongoing expansion and interstate and international visitors. Growth in tourism will need to be supported

by upgrades to facilities and infrastructure to meet the needs and expectations of a more sophisticated and international market, and by offering an authentic and memorable experience that is distinctive to Gippsland.

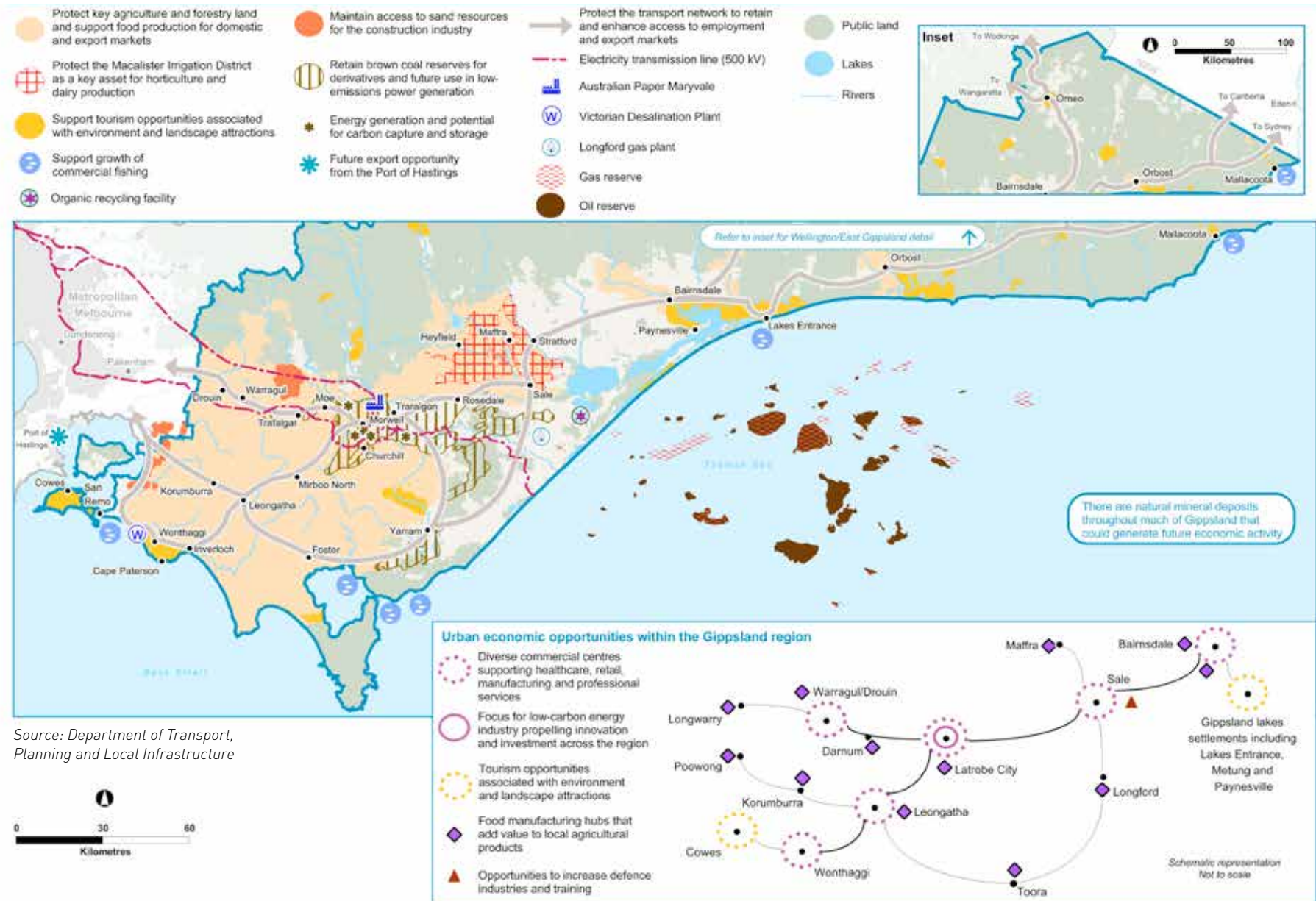
Population increase will drive growth in sectors such as retailing and services, and will also drive housing construction and related industries. An ageing population will increase demand on healthcare and related support services, driving the need for investment and employment opportunities in healthcare and social assistance.

Strong growth is also expected in sectors such as professional, scientific and technical services, defence, and finance and insurance services over the next 20 years. These 'knowledge industry' sectors are forecast to continue as high growth sectors for the foreseeable future. Collaboration with regional education and health facilities can build opportunities for innovation and further investment in these sectors.

Gippsland's economy is well placed to take full advantage of its existing assets and resources in energy and agriculture. It is also well placed to start to reduce its reliance on these assets to grow a more diverse economy with greater strengths in sectors such as health, education and knowledge industries. This plan's regional settlement framework and growth framework plans for regional centres will support this transition by identifying employment land to accommodate projected growth and by supporting stronger transport and communication links, both within the region and to markets in Melbourne and beyond.

This plan aims to support the priorities and recommendations of the Gippsland Regional Plan and the Latrobe Valley Industry and Employment Roadmap.

Map 6: *Future directions for the economy*



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11.1 Business, industry and services: working in the Gippsland region

Business and services

The projected growth in the retail and services sectors, including professional and technical services, finance, healthcare and social assistance, aligns with the Gippsland region's aim to diversify its economy. These sectors are projected to comprise more than 30 per cent of industry output in 2031. The growth in healthcare and social assistance will likely reflect the increasing proportion of older people in the community. Lifestyle, recreation and related services that meet the needs of retirees may provide further business growth opportunities. Professional and technical services will grow to meet the needs of a higher population and will benefit from partnerships and collaborative arrangements with education institutions.

Professional and service industries, sometimes referred to as 'knowledge industries', can benefit from being co-located with similar industries within commercial areas or precincts. These benefits can include knowledge sharing and collaboration. The retail sector will need to adapt and respond to the growth of online retailing, and will in part rely on broadening the appeal of commercial centres with greater emphasis on public amenity and 'place-making'. Further information about the projected growth of online retailing is provided in the background report.

Focusing retail and service sectors within a network of major urban centres will broaden the range of services available at these locations and be an attractor for future population growth. This process of population attraction and increasing diversity of services is key to enabling regional centres to reach a critical mass where they become self-sustaining and reduce escape expenditure.

Strategies for future land use

- Create vibrant and resilient commercial centres by consolidating a range of commercial and service activities within clearly defined boundaries
- Support streetscape and redevelopment initiatives in commercial centres that will be subject to significant growth (Traralgon, Morwell, Mid Valley, Warragul, Wonthaggi, Leongatha, Sale and Bairnsdale) so as to improve their attractiveness and usability by people with changing needs
- Support the development of industry sectors with strong prospects for increased employment such as knowledge industries, tourism, professional services and industries geared towards growing Asian and other international markets

Industry

Power generation

The power generation sector contributes significant economic value to the region and supports employment in a range of related maintenance and engineering businesses. While some coal-fired power generation plants will eventually close, the state will retain a need for reliable power generation that can be provided by coal-fired plants. Environmental considerations will support changes in power generation and renewable energy projects across Gippsland.

The plant and electricity distribution network centred in the Latrobe Valley is a significant asset for the region and Victoria, and provides the foundation for a future low-emissions energy industry. Future technology to enable commercial-scale carbon capture and storage would provide for the continued use of the brown coal resource and power generating facilities in the long term. In the future the region will remain a key energy-generating centre for Victoria.

Manufacturing and aviation

Gippsland has existing capabilities in advanced manufacturing and engineering services that support the mining and power generation sector, and specialised operations in agriculture, aircraft manufacturing and paper production. The region includes businesses with capabilities in steel fabrication, precision engineering and maintenance, packaging and plastics manufacturing that generate exports to both national and international markets.

Recent investment to redevelop defence facilities and the potential for expansion of RAAF operations in central Gippsland provide leverage opportunities for construction, manufacturing and technical service industries across Gippsland. The region's capacity in aircraft manufacturing also presents opportunities to diversify into similar high technology enterprises that may grow through collaboration with the Latrobe Regional and West Sale airports as well as supporting the defence

sector. Projected growth in professional and technical services will further support these industries. The Australian Paper Maryvale plant is a key economic asset for the region employing around 1400 people, and has the potential to support related textile processes and better utilise the region's timber resources.

Strategies for future land use

- Investigate further development of a green jobs sector in Gippsland based on environmentally sensitive and innovative products and processes that reduce environmental impacts
- Develop further the region's research and development profile in places with an established presence, such as Churchill and Ellinbank, building on the region's energy and agricultural industries and tertiary education facilities
- Facilitate opportunities within aviation-related industries, and support the continued presence and future growth of the defence sector in Gippsland
- Increase Gippsland's capacity in advanced manufacturing and engineering with particular reference to Latrobe Valley industries and release further industrial land in other centres as needed to benefit from available infrastructure and affordable land
- Facilitate the release of additional industrial zoned land in towns including Warragul, Leongatha, Sale, Lakes Entrance, Paynesville and Mallacoota

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Tourism

Tourism in Gippsland generates around \$860 million per annum and employs about 5300 people representing about six per cent of the region's total workforce¹. Most visitors to the region come from the domestic market, while unique nature-based attractions provide an opportunity to draw a greater number of international visitors. The tourism sector has the potential for industry growth independent of population growth. Future tourism development is planned to complement existing environmental and heritage assets while managing potential impacts on environmental and landscape values.

Gippsland's national parks and coastal areas, which are in close proximity to Melbourne, have a range of traditional tourism strengths. Phillip Island is a nationally important tourism icon with over three million visitors per annum. There is an opportunity to broaden this focus and capitalise on other environmental and cultural heritage assets across the region including at Wilsons Promontory, Gippsland Lakes, Mount Baw Baw and the Australian Alps, Croajingolong National Park and Tarra-Bulga National Park. Agriculture also provides opportunities for complementing nature-based tourism experiences through farm stay accommodation.

The rich cultural heritage of the region also provides opportunities to expand the tourism market.

Gippsland's tourism opportunities can be defined in three categories:

- new investment to rejuvenate existing product and expand existing opportunities
- further investment to meet unmet demand
- investment to facilitate new tourism opportunities.

To progress these opportunities, strategic tourism investment areas have been identified in places conducive to nature-based tourism (refer to Section 3 of the background report). Opportunities exist for private sector investment in towns and sensitively designed tourism infrastructure.

The State Government has released new guidelines relating to private tourism developments in national parks, with opportunities for leases up to 99 years in duration. Leases greater than 65 years will need to demonstrate regional and/or state significance, and it is anticipated that such proposals will be initiated by the government. Careful design will be a consideration to minimise risks to the environment and to protect life and property from natural hazards such as bushfire.

Councils may be required to assist in approving tourism investment opportunities in national parks, depending on the statutory approvals needed in each case. Opportunities to advance private tourism investment in Gippsland's national parks should be investigated, particularly in relation to the strategic tourism investment areas identified in this plan.

¹ REMPLAN, Gippsland Regional Plan 2010 Economic Profile:
http://gippslandregionalplan.com.au/Our_economy.php

Strategies for future land use

- Strengthen tourism in the identified strategic tourism investment areas of: Phillip Island, Bunurong Coast, Wilsons Promontory National Park, Tarra-Bulga National Park, Mount Baw Baw and the Australian Alps, Gippsland Lakes, and Croajingolong National Park, including the Coastal Wilderness Walk, through improvements and developments that enhance the visitor experience, are conducive to tourism development in the area, appropriately respond to natural hazards, and do not undermine the environmental and cultural heritage assets and values of the area
- Prepare a 20-year tourism strategy for Phillip Island, which emphasises high quality and sophisticated experiences, nature-based tourism investment, and includes an environmental capacity statement for the island
- Facilitate increased tourism investment and subsequent employment by supporting sensitively designed, nature-based tourism proposals that complement and are compatible with the region's environment and landscape attractions or are close to identified strategic tourism investment areas
- Encourage tourism development to locate within an existing urban settlement in identified strategic tourism investment areas, except where proposals:
 - (a) support nature-based tourism or are farm-based
 - (b) do not include a permanent residential component
 - (c) avoid or manage natural hazards
 - (d) are likely to be of regional significance
 - (e) are high quality and significantly add value to the tourism experience of the area
 - (f) do not detract from the environmental or landscape values of the area in which they are located.

11.2 Agriculture

By 2030 it is envisaged the Gippsland region will be a major contributor to achieving the aim of doubling food production in Victoria. There are major dairy processing plants located at Leongatha, Korumburra, Darnum and Maffra that service extensive dairy production areas. Other dairy manufacturing operations are located in Morwell and Longwarry. The region also has a significant cattle and grazing industry including beef, lamb and wool production. Meat and vegetable processing, including organics and hydroponic production, is located at Warragul/Drouin. There is also a significant food manufacturing industry centred on the East Gippsland Food Cluster at Bairnsdale.

Adjacent to the region's western edge, investigations by metropolitan councils and water authorities are continuing into the feasibility of establishing an intensive agricultural area to be known as the Bunyip Food Belt. This area could provide additional product for food processing and manufacturing facilities in Gippsland.

The region is currently investigating opportunities for new investment and value-adding in this sector through the Gippsland Food Plan supported by the Regional Development Australia Gippsland Committee. Gippsland's food manufacturing industry relies on a consistent supply of quality product to ensure operations can run at optimum capacity. Protecting and maintaining Gippsland's strategic and productive agricultural land is therefore essential for the continued growth of the food manufacturing sector. For more detail on the region's strategic agriculture and forestry areas refer to the background report.

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Dairy

Dairy production is a major contributor to the Gippsland economy, being valued at close to \$1 billion and employing around 6800 people on-farm and in related processing (eight per cent of the region's workforce). Gippsland produces approximately one-third of Victoria's total dairy production and around one-fifth of Australia's dairy production.

Gippsland holds a competitive advantage in dairying due to productive soils and high and reliable rainfall. There is also a significant level of investment in land irrigation, dairy processing plants and infrastructure that in turn supports food manufacturing and value-adding within the region. Milk produced in Gippsland supports 16 dairy factories that manufacture products for domestic and export markets.

A secure supply of raw milk product is critical to maintaining the secondary processing sector. There is opportunity for further growth in the industry with likely growth in herd size, spare capacity within processing plants, and additional water available for irrigation from infrastructure modernisation. The road freight transport network is a key link connecting the major dairy processing centres at Leongatha, Korumburra and Maffra to distribution and export hubs in Melbourne.

The dairy sector provides opportunities for the region to realise its aims for value-adding in agribusiness, and to provide a greater diversity of local employment including more high skilled jobs. In addition, there is the potential to further enhance Gippsland's profile as a food producer of state and national significance.

Horticulture

Horticultural production is concentrated in a number of locations including Thorpdale and Lindenow where there are very high versatility soils. Important vegetable growing and packaging operations also occur south of Longford. The Macalister Irrigation District is a key agricultural asset supporting both horticulture and dairy production, although recent trends indicate a conversion of dairy farms to horticulture in this area. Funding has been provided for a major modernisation of the district's gravity-fed irrigation system that will secure reliable water supply to farms and boost agricultural output. Intensive horticultural production and hydroponics are also emerging within this sector. Horticulture generates around 14 per cent of Gippsland's agricultural production value and comprises nine per cent of the state's horticulture output.

The productive land resource and infrastructure such as the Macalister Irrigation District are important assets that position the region to further develop its food production and processing opportunities. Work is currently underway on the Gippsland Food Plan, which will explore opportunities to better utilise the region's food production capabilities and support higher skilled jobs. Other opportunities exist in the potential use of fruit and vegetable by-products to develop biofuels and bioenergy.

Timber production

Gippsland's timber resource is comprised of native forest and plantation estates. Managed native forest is an important source for hardwood species used in manufacturing, building materials and quality paper production. Native timber harvesting, particularly in areas across east Gippsland, is significant for local communities such as Orbost and Heyfield in providing opportunities for employment and skills. Sustainable management practices have guided lower harvesting levels recently to provide certainty for the native timber industry in the long term. Plantation timber on leased public land or land operated under licence by commercial forestry operators is also a major contributor to the region's timber resource. Nearly one-quarter of Victoria's plantation estate is located in Gippsland.

The combined output from plantations and timber from the public estate supports a significant timber, pulp and paper manufacturing sector that employs around 3400 people (nearly four per cent of the region's workforce). Woodchip products from Gippsland are transported to Geelong and the Port of Eden for export. The industry is heavily reliant on good transport connections across Victoria and into New South Wales.

The timber resource provides opportunities for diversification into a broader range of wood products, and to more fully utilise timber residues in new processes such as renewable biomass energy. Further development of bioenergy technology could help to assist the region's transition to a low carbon economy.

Future timber industry development in the region may need to consider potential impacts on water supply, particularly given the potential increase in timber plantations as a result of initiatives to mitigate greenhouse gas emissions. Planning for any increase in plantation timber 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 bushfire and flood risks that may result from increasing treed vegetation cover, especially where occurring in close proximity to settlements. In the longer term, timber products in the region may change in distribution or degrade due to climate change and increased frequency of bushfire.

Fisheries

Gippsland has an important role as a centre for both commercial and recreational fishing based on freshwater fishing in its inland rivers and lakes, and saltwater fishing in its bays and ocean waters. With Victoria's largest commercial fishing fleet based at Lakes Entrance, the annual commercial catch is worth more than \$20 million. Key species include King George whiting, bream and gummy shark. The most economically important fishery is abalone based at Mallacoota.

There are potential growth opportunities in commercial and recreational fisheries in Gippsland as a result of climate change. Fish habitat, ranges and distributions may change in some fish species which may create both commercial and recreational fishing opportunities in the future for a number of species such as yellow fin tuna and marlin.

Future planning should protect commercial fishing ports and their transport linkages to ensure their continued operation and to retain options for possible expansion. Efficient and reliable transport networks will provide greater opportunities to move fish and seafood products to markets in Melbourne and interstate.

Biomass and biofuel opportunities

Agriculture and timber production are potential sources of raw material for new investment in biomass and biofuel industries. Gippsland's advantages in agriculture and timber production provide an opportunity for the region to become a leader in the development of biofuels and bioenergy to support economic diversification.

Gippsland Water operates a soil and organic recycling facility at Dutson Downs, which accepts and treats waste resulting in reduced material going to landfill. These processes and technology may support future efforts to better harness waste material for use in fuel or other energy production. The region should support business linkages between biofuel and bioenergy research and production facilities, and the agriculture and forestry sector as suppliers of raw materials. For more information on biofuels refer to Fuelled for Growth (Regional Development Victoria).

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Strategies for future land use

- Support the implementation of state policy by protecting the identified areas of strategic significance (agriculture and forestry) and irrigation assets to help grow Gippsland and the state as an important food bowl for Australia and Asia
- Ensure rural housing and subdivision is for an agricultural or forestry purpose, and critically assess other proposals for non-agricultural uses within the areas of strategic significance (agriculture and forestry) for their comparative economic, social and environmental benefits
- When considering development applications, recognise the importance that preservation and management of productive agricultural and forestry land make to the rural character of Gippsland
- Strengthen and improve decision making in identified areas of strategic significance (agriculture and forestry) by supporting councils to secure expert agribusiness assistance to research and assess planning applications for development, such as subdivision, and to build a common knowledge base and approach for subsequent assessments across Gippsland
- Encourage the development of suitable production and processing plants that add value to local agricultural, forestry and fishery products
- Support greater utilisation of agricultural and forestry residues, including for use in biofuel and bioenergy production
- Strengthen Gippsland's fishing industry by maintaining ports and enabling development of fishing operations at Lakes Entrance, Mallacoota, Port Welshpool, San Remo, Port Franklin and Port Albert

11.3 Natural resources

Coal

Gippsland has one of the world's largest deposits of brown coal, estimated at 33 billion tonnes of potential economic resource including 13 billion tonnes that is yet to be allocated to industry. The coal resource is predominantly used for electricity generation at power plants located close to the coal source in the Latrobe Valley – Hazelwood, Yallourn, Loy Yang A and Loy Yang B. The brown coal energy resource provides 90 per cent of Victoria's electricity via a transmission network to Melbourne and extending across the state.

Gippsland's electricity generation also has national strategic significance through its connection to the national grid. The introduction of initiatives to reduce greenhouse gas emissions has implications for energy generated from brown coal due to its high carbon emissions. Over time the cost of energy produced from high carbon-emitting fuels such as coal will increase, reducing its competitiveness compared to low emissions energy and renewable energy such as hydro power, geothermal, wind and solar.

However, there are opportunities for this resource to play an important ongoing role in the region's future through research into reduced emissions technology and alternative uses of brown coal. Through Clean Coal Victoria there is an ongoing coordinated approach across all levels of government to realise new opportunities for the region's coal resource. As this work continues, Victoria will rely on Gippsland's brown coal resource for energy generation in the short- and medium-term. It is critically important to retain access to the region's coal reserves so that opportunities that emerge in the future can be fully realised.

The need for transition and diversification from brown coal power generation has been acknowledged through the Gippsland Regional Plan and the Latrobe Valley Industry and Employment Roadmap. Future opportunities include the development of coal-to-products industries such as processing brown coal as a potential source of gas, diesel and fertiliser for both domestic and export markets. Ongoing research and development into carbon capture and storage technology may present a long-term opportunity for the region to realise the potential of its brown coal resource within a low-carbon future.

Both the Australian and Victorian governments are supporting the CarbonNet project to investigate the potential for carbon capture and storage in the Gippsland Basin, which is recognised as having the greatest potential for a project of this kind in Australia. This process could present the region with a new high skills industry and position Gippsland as a hub for low-emissions technology in the longer term.

Oil and gas

Gippsland produces 97 per cent of Victoria's natural gas and about 14 per cent of Australia's crude oil via the Gippsland Basin in Bass Strait. Oil and gas are two of the region's most important natural resources and important drivers of economic growth for both Gippsland and Victoria. The demand for these resources is growing, with Victoria's demand for gas expected to double by 2030. However, production of both oil and gas has now peaked and it is estimated that only about 15 per cent of known crude oil reserves and about 40 per cent of known gas reserves still remain for production. The main challenge for the industry is to extend production from existing and new fields. New oil fields may prove to be commercial and may extend the life of the oil industry although these are likely to be further offshore than existing reserves.

A number of onshore exploration licences have been approved in Gippsland that include minerals such as coal seam gas, sometimes referred to as coal bed methane, as well as other oil and gas resources. Exploration is at an early stage and as yet the potential for commercial extraction is not known. Locations in the region for potential exploration, retrieval and transfer of gas resources include Bass Gas at Nyora, Barry Beach marine terminal, the Port Anthony marine terminal and associated supply functions at Longford. It will be important to ensure that new earth resources industries such as coal seam gas, or onshore oil and gas, are developed in a way that is environmentally sustainable and compatible with existing and developing industries.

At a national level, the Standing Council on Energy and Resources has endorsed a National Harmonised Regulatory Framework for Natural Gas from Coal Seams (May 2013). The Victorian Government has endorsed the outcomes of the national framework and will ensure that state legislation is consistent with its findings. While the primary purpose of the framework is to be a guidance document to governments, it will benefit communities, farmers, other land users and industry by providing increased levels of consistency, certainty and transparency in the management of natural gas from coal seams in Australia.

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Sand, stone and mineral extraction

Extractive industries for sand and rock are necessary to support Victoria's construction industry. Continuing high growth rates are projected for Melbourne and regional Victoria, and there are consequent pressures to identify and protect sand and hard rock resources with good access to these markets.

Gippsland is a major provider of sand to the construction industry, with important resources in the Grantville-Nyora area that supply metropolitan Melbourne. Industry sources anticipate a shortfall of supply within 10 years due to diminishing resources and increased demand. New areas will need to be identified and protected through planning measures. Sand resources at Trafalgar have been identified as a resource of state significance and would be a suitable medium- to long-term addition to the Grantville-Nyora supplies.

Hard rock resources for crushed rock and aggregates are also important, particularly for road and drainage construction and, like sand supplies, are best located convenient to the market. Resources are well distributed across Gippsland with sufficient supplies for many decades. Maintaining access to locally accessible construction resources helps to limit transport and related costs and retain competitive advantages for Gippsland industries.

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

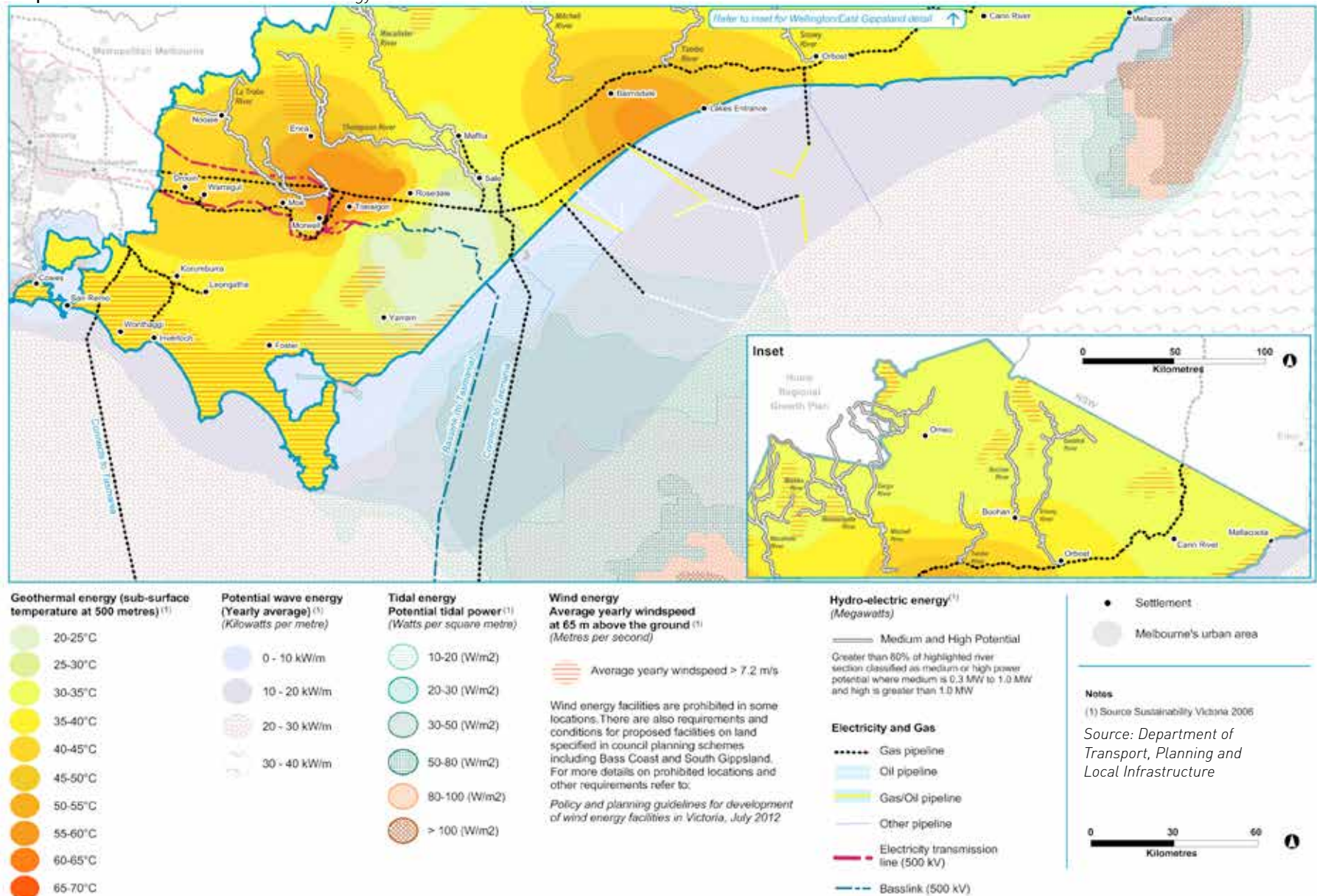
further data gathering and planning to better protect the state's extractive resources for future development. The outcomes of these activities may have implications for future planning provisions. Extractive industry interest areas located in the region are shown in Figure 31 of the Gippsland Regional Growth Plan Background Report.

There may also be economic opportunities for a local mining industry in Gippsland. There has been an active industry in the past, most notably with goldmining at Walhalla but also with copper and tin mining, and there are also recognised deposits of lead, iron, zinc, silver and platinum, particularly in East Gippsland. These resources and other minerals have the potential to be commercially productive subject to variables such as world prices, the value of the Australian dollar and demand from major markets such as China. There is currently exploration activity for minerals sands such as rutile and zircon.

Renewable energy

While Gippsland's energy in the immediate term is closely linked to its brown coal deposits, there are opportunities to develop renewable energy resources as part of a long-term strategy to maintain Gippsland as Victoria's energy hub (see Map 7: Future directions for renewable energy). Potential renewable energy resources in the region include geothermal, wind, hydro-electric, wave and tidal generated energy. Geothermal and wind energy are likely to offer the best prospects in the short- to medium-term. There are two wind energy facilities operating at Toora and Wonthaggi and a third, much larger facility, is currently under construction at Bald Hills. There are likely to be opportunities to further increase production of wind energy although wind turbines and associated infrastructure will need to be carefully located to avoid impacts on landscape and housing.

Map 7: Future directions for renewable energy



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Geothermal energy involves utilising heat generated from deep underground and converting it to electricity. Some initial investigation of geothermal energy in Gippsland has been supported by State Government through the Latrobe Valley Shallow Geothermal project as an opportunity to build on technology and business innovation in the energy sector. In the future geothermal energy resources may be integrated with existing transmission infrastructure to offer a sustainable, long-term energy commodity for export across Victoria and interstate.

Coastline and ocean currents particularly around Westernport and Phillip Island provide favourable conditions to generating tidal energy. This form of energy can be captured with the use of tidal turbines or tidal barrage systems. A 150 kilowatt demonstration tidal device has been operating at Phillip Island. Wave energy captured using floating buoys, platforms or submerged deep water devices can generate electricity from the motion of the ocean's waves. Gippsland's extensive coastline provides an opportunity for research and testing of wave energy potential for the future.

In addition, there may be opportunities for energy produced from agricultural or forestry products, such as bioenergy, which are discussed in Section 11.2 Agriculture.

Strategies for future land use

- Prepare a strategic energy plan that identifies and protects the region's established and emerging energy resources in order to maintain Gippsland as Victoria's energy hub. The plan will support appropriate initiatives that involve renewable energy or reduce or mitigate carbon emissions (including geothermal, hydro-electric, tidal, wind, organic waste, clean coal processing and carbon capture and storage), support infrastructure investment, and minimise environmental, cultural heritage and social impacts
- Investigate development and infrastructure provision that assists continuing production from the region's oil and gas fields and technologies to maximise extraction
- Support the development of mineral and other earth resources where proposals meet the requirements of the relevant environmental and regulatory processes
- Prepare a new Gippsland Coalfields Planning and Investment Framework to provide policy and planning guidelines to support the implementation of work currently underway by Clean Coal Victoria, including development of the Victorian Brown Coal Roadmap. The framework would identify important coal resource and environmental assets and assist to implement amenity and infrastructure buffers. It is intended that the framework would replace reference documents currently listed in the State Planning Policy Framework
- Review the Regional Sand Extraction Strategy – Lang Lang to Grantville 1996 and associated planning scheme provisions with a view to protecting important regional sand resources and supporting the construction sector
- Identify, manage and facilitate access to natural resources where appropriate, including sand and stone, minerals, timber and renewable energy potential

12. Environment and heritage

Future directions

- Manage risks to Gippsland's communities and economy from natural hazards
- Manage Gippsland's environmental and heritage assets to achieve the best outcomes for the region's environment, economy and community
- Plan for potential impacts and opportunities arising from climate change and initiatives that support national and global action to reduce greenhouse gas emissions

The Gippsland region has rich and diverse environmental and cultural heritage assets. The Gippsland Regional Plan recognises that the diversity of landscapes in Gippsland underpins its prosperity and liveability and acknowledges these environmental assets are central to the region's sustainability. Priorities in the Gippsland Regional Plan aim to capitalise on these environmental assets, particularly:

- the Gippsland Lakes as a significant attractor, and the need to improve the ecological health of the lakes system
- national parks and coastal parks such as Wilsons Promontory, and opportunities to leverage investment in nature-based tourism.

Effective management of Gippsland's environmental and cultural heritage assets will help maintain its capacity to provide primary production output, facilitate transition to a low-carbon economy, and protect critical water and tourism assets. The strategic tourism investment areas mentioned in Section 11.1 of this plan will also help support these activities.

There are four catchment management authorities that cover the Gippsland region: East Gippsland; West Gippsland; Port Phillip and Western Port; and North East. These catchment management authorities invest in the protection and enhancement of the environment throughout the region, along with public land managers and bodies such as the Gippsland Coastal Board. Regional catchment strategies are the primary integrated regional strategies for achieving improved environmental outcomes in the region. Regionally significant environmental assets identified in this plan align with those identified in the regional catchment strategies. This plan complements catchment management authority initiatives by encouraging appropriate land use planning mechanisms that recognise and respond to regionally significant environmental assets.

The Gippsland Coastal Board manages strategic coastal and marine planning issues for the Gippsland coast between San Remo and the New South Wales border. The Gippsland Coastal Board has developed coastal action plans to manage key issues and areas along its coast. The three coastal management authorities also undertake activities to investigate and protect the marine assets adjacent to their regions.

Registered Aboriginal Parties will have an important role in planning place-based activity and development, and there are benefits to engaging with the relevant Aboriginal² community organisations early in strategic planning processes. Currently the Gunaikurnai Land and Waters Aboriginal Corporation, Wurundjeri Tribe Land and Compensation Cultural Heritage Council and the Taungurung Clans Aboriginal Corporation have legislated responsibilities relating to the management of Aboriginal cultural heritage places in the Gippsland 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 by the Gunaikurani People over Crown land in a significant portion of the region.

² Throughout this document the term 'Aboriginal' is used to refer to both Aboriginal and Torres Strait Islander people. Use of the terms 'Koori', 'Koorie' and 'Indigenous' are retained in the names of programs and initiatives and, unless noted otherwise, are inclusive of both Aboriginal and Torres Strait Islander peoples.

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Key areas where potential growth or land use change may intersect with environmental and cultural heritage assets have been identified. Natural hazards have been mapped and form part of the considerations for urban growth. This plan provides direction on these issues.

The region will draw on environment and cultural heritage assets by enabling appropriate tourism, settlement and economic diversification opportunities, while protecting and maintaining environmental and cultural heritage assets. This will be achieved by directing settlement growth and development to minimise impacts on high value environments and cultural heritage assets, and to avoid areas subject to high risk from natural hazards by utilising appropriate land use planning mechanisms to complement other natural resource management objectives and activities.

There are many areas that require detailed planning consideration before progressing with urban growth proposals. These planning considerations are illustrated on Map 8 and explored further in Section 12.1 Environment and heritage assets, and in Section 12.2 Natural hazards and risks.

12.1 Environment and heritage assets

Environment and cultural heritage assets are essential to the region's continued growth, providing foundations and attractors for many industries and people. Protection and enhancement of these assets present many opportunities within the Gippsland region and should not be seen as an obstacle to growth, but rather as part of the sustainable development of the region.

The region's wilderness areas and national parks also have inherent value as places where people can connect to the natural world, appreciate the landscape, and observe and interact with native wildlife. They provide unique experiences that cannot be replicated or replaced in the built environment. Protection of these places and their environmental and cultural heritage assets acknowledges their value and ensures they remain intact for the flora and fauna they include, and for the benefit of future generations.

Cultural heritage

Gippsland has a rich and unique cultural heritage linked to gold and coal mining, to its maritime history and to its enduring connection to Aboriginal peoples. Many important Aboriginal cultural heritage and historic heritage places are located within some of Victoria's best known state and national parks, including Wilsons Promontory and Cape Conran. Existing Aboriginal cultural heritage experiences in the region include the Bataluk Cultural Trail. Much of the region's historic heritage is related to mining. Historic mining sites such as Walhalla, Omeo, Toombon goldmining precinct and the State Coal Mine in Wonthaggi form part of many tourist driving routes.

In planning for growth and future land use change, cultural heritage is considered to be a community, economic and social asset. The region's historic origins and cultural heritage assets are important to contemporary communities and are an integral element in creating a sense of place.

Many tourists seek heritage tourism experiences. Aboriginal cultural heritage and historic heritage attractions and services contribute to the regional economy and employment. Building a comprehensive sense of place around cultural heritage assets is important in developing resilient and sustainable communities.

Terrestrial habitat

Gippsland is well known for its significant forest and woodland areas on both public and private land. Terrestrial habitat, and the plants and animals supported by it, is a key consideration for land use planning as it is vital to the region's productive future. Areas such as rangeland and alpine environments provide numerous environmental values, including tourism attractors for the region.

Catchment management authority initiatives include improving the quality and extent of remnant vegetation, especially significant areas as identified in regional catchment strategies. There are economic opportunities for landholders in the region involving the management of ecosystem services³ and on-farm carbon sequestration. Improved coordination between land use planning and natural resource management is encouraged in this plan to achieve multiple benefits from these activities. 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, coastal, estuary and marine assets

The Gippsland region spans the Great Dividing Range and contains all or part of 13 significant river catchments incorporating nine heritage rivers⁴ and numerous nationally and internationally significant wetlands. Many rivers provide water supplies within and external to the region. The region's coastal environments, including national parks and the Gippsland Lakes, contribute significantly to the economic, cultural, environmental and recreational life of residents and visitors. These areas attract significant peak populations during holiday periods, and are critical for supporting agriculture and forestry, commercial and recreational fisheries and tourism.

Many waterways, coastal, estuary and marine assets are under significant pressure for development given the opportunities they present for the region's economic and population growth. Growth around waterways, coastal, estuary and marine assets will be carefully managed to protect these assets while achieving regional growth benefits. This includes careful planning for tourism, industry and settlement growth to take account of these environmental assets and their associated cultural heritage assets and natural hazards, particularly around the Gippsland Lakes and Bunurong Coast. Suitable planning tools such as overlays will be consistently developed across the region to manage threats to these assets, and protect the value they return to the region's economy and community.

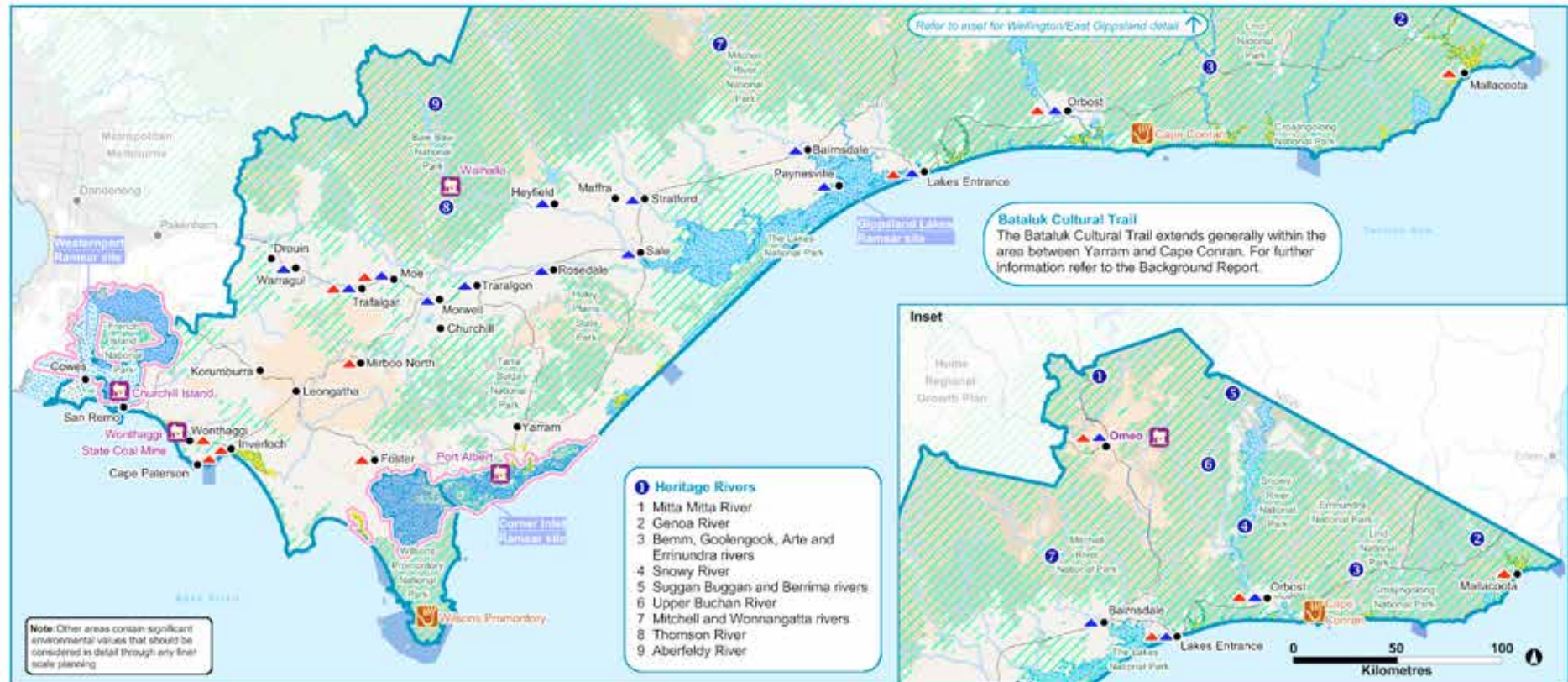
This plan highlights high level planning considerations that will apply to more detailed planning proposed for the Gippsland Lakes Sustainable Development Plan, an initiative in the Gippsland Lakes Environment Strategy. The Gippsland Lakes also require ongoing catchment management activities to protect and improve water quality, which needs to be complemented by appropriate land use planning.

³ 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 conserves and enhances the environment.

⁴ Refer to Section 6.4 of the background report.

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Map 8: Future directions for environment and heritage



Avoid or minimise the impact of development on high value environmental and cultural heritage assets, including significant landscapes.

Support initiatives to enable the establishment, protection and reconnection of ecosystems through large-scale native vegetation corridor projects.

Reduce the impact of development on the quality and security of water resources.

Reduce the impact of development on high value coastal, estuarine and marine assets such as the Gippsland Lakes and Corner Inlet.

Manage risks to settlements by directing development away from areas of unacceptable risk from natural hazards.

Source: Department of Transport, Planning and Local Infrastructure

Catchment health

Water supply is critical to the continued economic success of the Gippsland region and to complement the proposed population growth within Gippsland and Melbourne. Pressure for increased settlement and tourism development exists in some declared water supply catchments and needs to be carefully managed to protect both water quality and water supply.

Councils may need to review their domestic wastewater management plans to enable effective planning for the type of settlement and economic activity that can occur in these areas while protecting catchment health.

Significant landscapes

There are many significant landscapes⁵ in the Gippsland region. Those associated with the coastal environment have already been identified through the Coastal Spaces Landscape Assessment Study, with its recommendations adopted across the region via the application of the Significant Landscape Overlay and Environmental Significance Overlay. The region will need to consider if there is a future need to identify and protect significant landscapes across inland areas in a consistent way. This would help protect economic diversification opportunities within the region, particularly around nature-based tourism. Significant features and landscapes within inland Gippsland that may warrant investigation, include the South Gippsland hills, Buchan Caves, the Baw Baw Plateau, valleys of the Tambo, Mitchell and Macalister rivers, the Snowy River, the Omeo Valley and Great Alpine Road and many other rangeland and alpine environments.

Strategies for future land use

- Avoid urban growth impacts in areas with high value environmental and cultural heritage assets such as significant vegetation, waterways, marine areas, significant landscapes and Aboriginal cultural heritage and historic heritage places
- Plan strategically to reduce the impact of urban growth on the use and security of water resources and minimise risks to the environment
- Plan strategically to reduce the impact of urban growth on high value coastal and waterway assets such as the Gippsland Lakes, Corner Inlet, Anderson Inlet, Mallacoota Inlet and their source rivers
- Support initiatives to enable the establishment, protection and reconnection of ecosystems through large-scale native vegetation corridor projects
- Apply planning tools, such as the Significant Landscape Overlay, Environmental Significance Overlay and Heritage Overlay, to protect significant inland and coastal landscapes and cultural heritage assets. The endorsed regional catchment strategies can assist to inform this process
- Provide for the sensitive adaptive reuse of historic heritage places, where appropriate, and appropriate infill development in heritage streetscapes to enable historic heritage assets to be conserved and celebrated
- Support the preparation of a sustainable development plan for the Gippsland Lakes and foreshore to identify appropriate development around the lakes

⁵ Significant landscapes are considered by this plan to be those assessed for landscape characteristics and identified as visually significant landscapes, consistent with the Coastal Spaces Landscape Assessment Study.

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12.2 Natural hazards and risks

Natural hazards and risks are considered in this plan to enable appropriate growth and development opportunities across the Gippsland region.

Flood

Significant areas of the Gippsland region are subject to flood risks. Land use planning decisions should be based on the best quality information on flood hazard to minimise risk to life, property, community infrastructure and environmental assets. Accurate flood mapping is critical in this regard.

Flood provisions in planning schemes should be applied consistently across the region to avoid inappropriate development or redevelopment, or to require appropriate development responses.

Monitoring and regular updating of flood mapping will be critical to inform settlement planning and economic growth into the future. The regional settlement framework included in this plan incorporates the latest flood mapping and has been developed to minimise risks from flood. Map 8 indicates which settlements have existing flood overlays and therefore potential implications for development in specific areas.

Managing flood risk is an issue particularly for the affected areas of the settlements of Latrobe City, Bairnsdale and Sale. As new information about flood hazards emerges over time, other settlements may also need to apply flood overlays to their towns. There may be the need to respond to and manage anticipated minor flood impacts through design responses or mitigation works such as retarding infrastructure or providing alternative means for water to escape. Flood-prone land can in some circumstances be incorporated in an urban context for use as open space or recreation areas. Other responses may include mitigation through infrastructure works to divert floodwater or provision of drainage.

Bushfire

Challenges exist in the Gippsland region given the number of high bushfire hazard areas that intersect with settlements as well as areas experiencing rural residential and tourism expansion. Regional and localised planning considers bushfire risk in detail, with the assistance of planning tools such as 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 and the Department of Environment and Primary Industries. The regional settlement framework included in this plan has been developed to minimise risk from bushfire.

Map 8 indicates settlements where the existing Bushfire Management Overlay applies and where there may be implications for development in specific areas. The Bushfire Management Overlay in the region is being updated to reflect updated understanding of bushfire hazards in Victoria, and may cover additional settlements.

Future planning for urban areas will also need to consider the potential for changes in landscape bushfire risk. Changes to landscape can occur over time with the introduction of land uses permitted by planning schemes. An example of potential increased risk associated with landscape change includes the development of timber plantations within natural resource or industrial buffer areas adjacent to existing or planned urban areas. This is particularly relevant for buffer areas around the Yallourn coal mine and the Australian Paper Maryvale site.

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 of 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.

Acid sulfate soils

Coastal acid sulfate soils are known to occur in the Gippsland region, and there is a high probability that acid sulfate soils also exist in association with inland wetlands. These soils should remain undisturbed to prevent serious impacts on infrastructure and human health that can result from their mismanagement. The growth proposals in this plan consider the potential for acid sulfate soils by identifying ideal locations for economic and settlement growth opportunities. Local planning will need to consider this risk in more detail.

Threats to soil health

Soil erosion and salinity are of particular threat to the health of soils through parts of Gippsland and can affect their productivity, both in terms of being able to support agriculture and forestry and their ability to support other natural assets such as native vegetation. Declining soil health can also have impacts on other assets, such as water quality in waterways, wetlands and estuaries. The catchment management authorities have programs in place to manage soil erosion and salinity threats across the region.

According to the West Gippsland Erosion Management Plan, tunnel and gully erosion are perceived to be the greatest risk across their region. Sheet and rill erosion are also seen as erosion issues in some cropping areas and in steeper parts of the region.

Land slip is a hazard particularly for areas in the west and south of the region around the Strzelecki Ranges and South Gippsland hills, which needs careful consideration in any planning investigations and decisions. Salinity is an important consideration for urban growth, particularly in areas that may experience urban salinity issues, such as Sale and Leongatha.

Land use planning should consider particular threats to soil health, particularly where any settlement growth is proposed in areas of high soil erosion or salinity potential. Various overlays can be used by local councils across the region to manage some soil issues, such as the Erosion Management Overlay and the Salinity Management Overlay, however these overlays are not used in every council area in the region.

Strategies for future land use

- Direct urban growth away from areas of high risk from bushfire, flood, acid sulfate soils and coastal inundation and adopt a precautionary approach
- 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
- Consistently incorporate information on environmental assets and natural hazards into planning schemes by updating the relevant overlays when necessary to reflect new understanding and to recognise high value environmental assets and priority landscapes identified in regional catchment strategies

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Climate change and coastal hazards

The Gippsland Regional Plan recognises the potential risks to Gippsland's natural environments, settlements and economy from climate change, along with potential economic diversification opportunities associated with climate change and a low carbon economy. 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 such as new industries and diversified use of existing commodities. This information will assist with strategic land use planning, including consideration of any potential increase in exposure to natural hazards. The former Department of Primary Industries, with the University of Melbourne and support from the Gippsland Local Government Network, has undertaken research to explore opportunities associated with climate change including agricultural futures planning.

Reduced rainfall, more severe droughts and altered forest structures may reduce runoff to critical water catchments as a result of climate change, affecting Gippsland's ability to supply Melbourne with water, as well as affecting Gippsland's resident and industry users, including electricity generators in the Latrobe Valley. More frequent bushfire and increased temperatures also have implications for water quality and may impact on human health and regional tourism.

Important built assets, infrastructure and environmental and cultural heritage assets along the region's coast may be at increased risk due to coastal storms, sea level rise, coastal erosion and inundation as a result of climate change. Losses in residential and commercial property, services and infrastructure may potentially occur as a result of these events. Areas most vulnerable to inundation are the immediate foreshore and low-lying coastal areas in the region.

To respond to climate change and the potential increase in coastal hazards, this plan considers the potential increase in coastal hazards by identifying strategic and settlement opportunities in coastal areas. It supports the

coordination of climate change adaptation initiatives across the region, including implementing the relevant findings of current research projects to identify adaptation responses suitable for Gippsland. As information continues to emerge on the potential implications of coastal hazards and climate change, land use planning considerations should be incorporated into strategic land use planning. More information on coastal hazards is available on the Victorian Government's climate change website⁶.

Land use planning can assist to mitigate climate change impacts through support for measures that reduce greenhouse gas emissions. This may include supporting greater investment in less carbon-intensive fossil fuels, such as natural gas, supporting the development of renewable energy resources and facilitating the introduction of clean coal technologies and carbon capture and storage. Management of natural carbon sinks such as native forest and plantation timber can also assist to sequester carbon dioxide from the atmosphere.

Strategies for future land use

- Monitor, assess and act on the potential impacts of climate change and collaborate with other agencies and research institutions to inform adaptation strategies including future land use planning
- Support regional and local climate change mitigation strategies that reduce greenhouse gas emissions, including development of renewable energy, technology investments to improve energy efficiency and optimal use of natural carbon sinks or geological reservoirs
- Ensure regional and local planning responds to opportunities for innovation and industry development arising from climate change and initiatives to reduce greenhouse gas emissions, for example by facilitating land use change that supports sustainable industry alternatives
- Support initiatives to undertake adaptation planning for climate change impacts in coastal areas and towns and implement through relevant changes to planning schemes

⁶ www.climatechange.vic.gov.au/adapting-to-climate-change/future-coasts

13. Living in the region

Future directions

- Promote the sustainable growth and development of Gippsland through an identified network of settlements
- Develop settlements that have a strong identity, value their natural and cultural heritage and are prosperous and environmentally sustainable

Gippsland faces particular challenges in accommodating projected population growth within the context of competing priorities for land and natural resources, and the potential increased risk from natural hazards such as bushfire, coastal inundation and flood. A regional settlement framework is needed to better understand where and how the region can accommodate a growing population. It is also required to guide urban development to locations that reduce impacts on environmental and cultural heritage assets, facilitate economic growth opportunities and reduce the risks from natural hazards. This plan aims to support safe and well planned urban settlement that provides a quality living environment, thriving economies and equitable access to services.

Gippsland's settlements will need to accommodate a projected increase in population of approximately 116,000 people, from 270,400 in 2011 to 386,000 in 2041. The forecast annual average population growth rate of 1.19 per cent is mid-range among Victoria's regions.

Gippsland also has opportunities to grow its population at a faster rate by attracting and retaining more people. The region's population could reach 465,000 by 2041 with significant investment in natural resources such as energy resources and agriculture, improved access to and from Melbourne, improved lifestyle and housing affordability, and upgraded services and facilities in the region's main towns.

Strategies to increase youth retention are seen as one way to lessen the projected ageing of the region's population profile. Similar to national trends, the forecast growth of retirement age and elderly population groups is projected to increase from 20 per cent to 35 per cent by 2031. However, the age structure varies across the region between municipalities. Baw Baw and Latrobe have the youngest populations while Bass Coast and East Gippsland have the oldest.

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13.1 Existing settlement framework

Gippsland settlements that have experienced strong growth in recent times include Traralgon, Warragul, Drouin, Wonthaggi and Bairnsdale. Much of this growth comes from Melbourne, driven by housing affordability, access to metropolitan services and employment, and the regional town, rural and coastal lifestyles on offer.

The region is characterised by a settlement pattern that is mainly focused on its primary transport networks. While most of the population is located in the region's main towns, more than 30 per cent of the region's population resides in settlements of less than 500 people. The relative proportions will change as larger centres and towns become more urbanised.

The main population centres along the Princes Highway are Warragul/Drouin, Latrobe City as the regional city consisting of Moe, Morwell, Traralgon and Churchill, Sale and Bairnsdale. In southern Gippsland, Wonthaggi and Leongatha are the main population centres with Phillip Island also experiencing strong growth.

There are other smaller towns that provide an important district service centre role and provide basic commercial and service functions for local residents and wider catchments of rural populations. These towns include Lakes Entrance, Orbost, Omeo, Mallacoota, Foster, Mirboo North, Maffra, Heyfield, Rosedale, Yarram and Trafalgar.

Many smaller towns and settlements experiencing limited growth provide a local service function and offer an alternative lifestyle option. These places tend to be along the coast or in rural settings across Gippsland. Outside these settlements there are many low density rural residential style developments where people enjoy living in attractive landscapes with some services and close proximity to towns.

13.2 Future settlement pattern

Development of a regional settlement framework for Gippsland is influenced by the need to:

- manage growth in areas subject to growth pressures
- complement and support economic growth directions and community preferences
- resolve competing demand from other land uses such as agriculture and mining
- avoid natural hazards such as bushfire, flood and coastal inundation
- protect highly valued environmental and cultural heritage assets.

Population projections and economic analysis indicate the majority of growth will occur in the regional city, other regional centres and main towns. Proximity to Melbourne, employment opportunities, landscape and amenity locations, and access to transport connections are also factors attracting growth to particular locations.

A network of integrated and prosperous settlements: regional city, regional centres and towns

The region is planning for strong population growth dispersed across Gippsland, with most of that growth focused in and close to the regional city, and other regional centres. It includes Latrobe City, and a network of sub-regional centres comprising a regional centre and one or two nearby smaller towns that provide alternate lifestyle options (see Map 9). This approach will enable the Latrobe Valley corridor, southern Gippsland and other coastal and inland areas to have appropriate focus points for business, services and community interaction.

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". Warragul/Drouin, Wonthaggi and Leongatha are identified as potential towns for growth.

The Gippsland region aims to build on a networked settlement approach in order to:

- foster larger urban centres with the ability to support higher labour productivity and jobs
- diversify the economy and attract investment in the projected higher employment service sector industries of healthcare, scientific and technical services, retail, trade, accommodation and food
- facilitate interaction among businesses by concentrating the location of services and facilities
- enable surrounding areas to benefit by growing their own economies due to their access to higher order services and diversity of economic opportunities
- efficiently provide higher order services to communities throughout the region
- support the retention of the region's youth and skilled workers
- utilise existing infrastructure and service capacity and reduce costs to government and the community
- offer diversity in urban and town character and residential living
- retain the region's significant rural, natural and coastal landscape areas and lessen exposure to natural hazards.

Planning for this networked approach will be particularly important in and around those places expected to experience the strongest growth pressures such as Bairnsdale, Warragul/Drouin, Traralgon and Wonthaggi. Gippsland councils have completed strategic planning for all of the region's major centres, which has identified growth areas to accommodate projected growth in the short- and medium-term.

Dispersed towns and settlements

There are a range of towns and settlements in Gippsland that are spread along major transport corridors and in rural and coastal landscapes that provide important district and local roles for their communities. Almost all of these places are expected to see some increase in population. Land use approaches that are important to these communities include protecting local character, environment and heritage assets and values, managing risks associated with natural hazards, improving access to services, and supporting economic diversification. Providing integrated community hubs of services and facilities can be an efficient way of meeting local community needs while providing better access to higher order services in larger centres.

Coastal towns

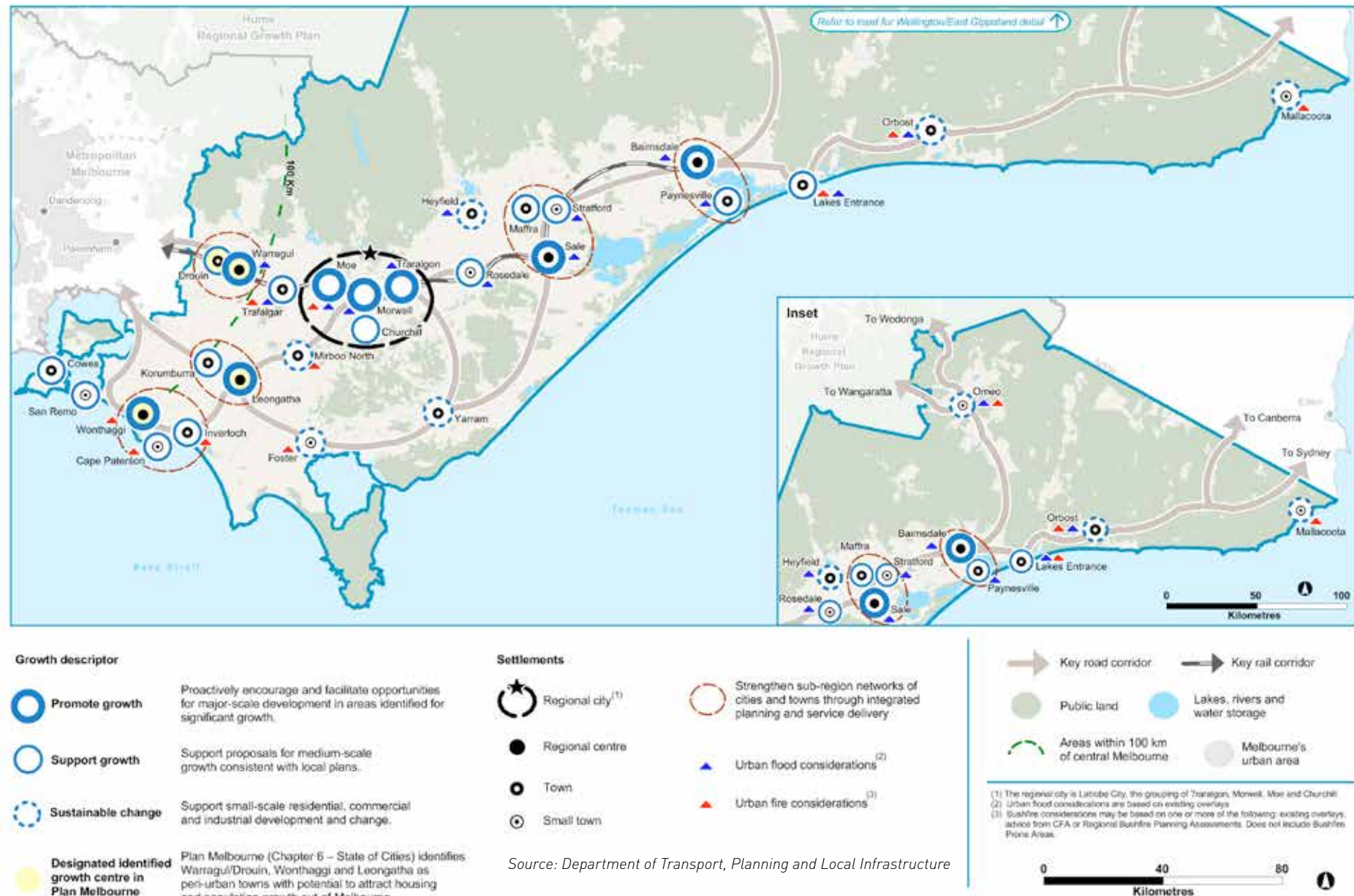
Coastal communities may require support to assist in transition and adaptation to the impacts of climate change including coastal storms, sea level rise, coastal erosion and inundation. Projects underway by government will assist to better inform communities about potential impacts and adaptation strategies.

Connectivity and transport

Gippsland's settlement pattern reflects the importance of transport access. Most of the region's major population centres are located on the east-west Princes Highway transport spine. This dominant route provides links between large centres, Melbourne and interstate. From Melbourne to Bairnsdale the road link is mirrored by rail, with connecting coaches providing further transport options. Secondary major transport routes are the Bass and South Gippsland highways, which connect Wonthaggi and Leongatha to Melbourne as well as providing important linkages within the region and further east. North-south routes, including the Strzelecki Highway, connect southern Gippsland to the Princes Highway and Latrobe City, and onward to alpine areas and New South Wales. The Grand Ridge Road, the Hyland Highway and the Great Alpine Road are important scenic routes for tourists.

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Map 9: Future directions for settlement



Planning for growth areas

Gippsland will become home for approximately 116,000 additional people by 2041, but this population will be significantly more diverse in age and household type. Family structures are projected to change, with significant increases in the number of smaller households, including single persons, couples without children and lone parent households. 'Single persons' is the fastest growing household type in Gippsland and is projected to make up 33 per cent of household types by 2031.

The age composition varies between towns. A higher number of young families are present in areas close to Melbourne while coastal areas have a higher percentage of retired and elderly people. In many towns along the Gippsland coast, such as Cowes and Inverloch, there is a higher part-time population than permanent population. The population of many Gippsland towns therefore varies on a weekly basis as well as a seasonal basis, with part-time residents often having different expectations and demands for services.

Currently new residential development across Gippsland is occurring at an average of 10 lots per developable hectare. In comparison with other regional cities and centres, this is considered low density, with regional cities such as Ballarat providing a lot density for new areas of 15 lots per hectare. These densities are providing housing diversity and responding to changing household compositions such as more single parent and lone person households. Smaller house and land parcels can provide a more suitable and affordable option for single and two person households.

Growth in residential development is partly due to the unique characteristics and attributes of individual towns and their surrounds, which contribute to the liveability of a town. People may choose to live in Lakes Entrance because of its coastline and lakes, Warragul because of its rural setting and access to the ski fields or Leongatha because of its rolling hills. There is a need to identify these characteristics and attributes, where they are particularly valued by the community, and ensure they are protected and enhanced.

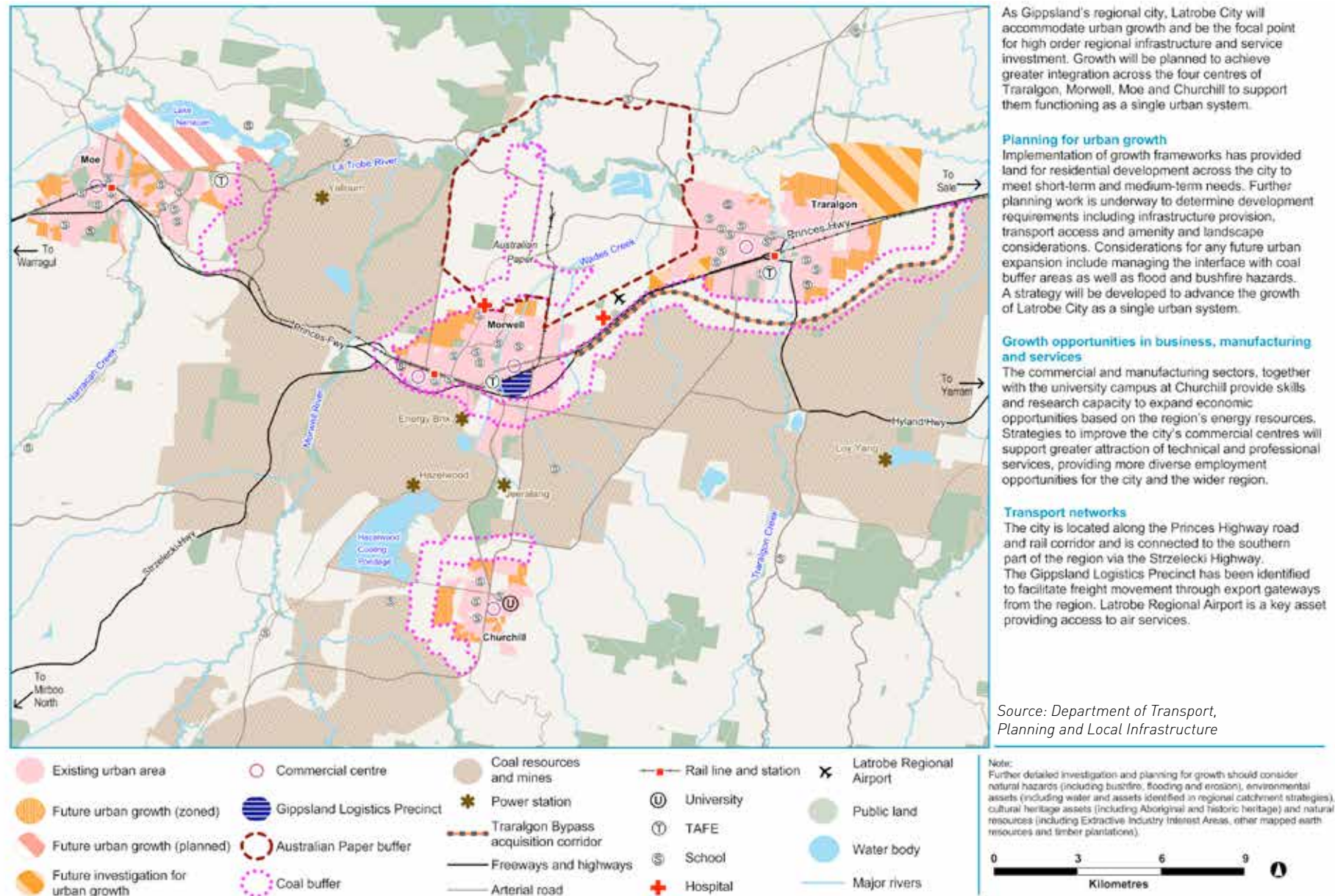
13.3 Future directions for cities and towns

The regional settlement framework (as shown on Map 9) directs projected population growth to six defined growth nodes consisting of Latrobe City as the regional city, and the regional centres of Bairnsdale, Leongatha, Sale, Warragul/Drouin, and Wonthaggi. These locations are serviced by existing utilities, education, health, and community infrastructure. Continued growth and investment in these locations will help generate a critical mass of population, which in turn will drive demand for business and employment. Greater housing diversity, cultural and recreational opportunities in these centres will be an important attractor for population growth and retention.

The regional city and regional centres are connected through Gippsland's transport network, and will continue to provide a range of employment, education, health, and recreation opportunities accessible to the region's population, including dispersed and remote communities. The settlement framework provides clear direction of settlement roles and functions and promotes greater coordination of investment in services and facilities through the identified sub-region networks.

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Map 10: Latrobe framework plan



Latrobe City as Gippsland's regional city

Latrobe City, the regional city, provides a focus for future regional investment to help achieve the momentum necessary for a more diverse and resilient economy, capable of attracting more specialised services and enhancing access to goods and services otherwise only available in metropolitan Melbourne.

Significant assets such as the Latrobe Regional Hospital, Latrobe Regional Airport, the university campus at Churchill, manufacturing and commercial functions, and rail and road transport connections provide a platform to support a knowledge-driven economy directed at utilising the region's resources in new and sustainable industries.

The aim of promoting and planning for Latrobe City as Gippsland's regional city is aligned with work to accelerate population growth in regional cities by Regional Cities Victoria and supported by the State Government. The release of the Regional Cities Victoria Growth Framework provides resources including growth indicators and diagnostic tools to assist regional cities in establishing targets and investment priorities.

Future directions for the regional city will include integrated planning across the four urban centres to provide adequate land supply for residential and employment uses, and planning for infrastructure to meet the needs of a growing and changing population, business and industry (refer to Map 10). Long-term investigation areas for urban growth have been identified, and further planning work for these areas will be determined in line with population growth and future needs.

An assessment of urban land supply indicates a potential yield in excess of 12,500 residential lots has been identified to meet future demand. This supply is sufficient to meet the additional 7800 households required by 2041 based on indicative population estimates.

Efficient and reliable transport connectivity between the four centres (Traralgon, Morwell, Moe and Churchill) will be important to enable full integration of their respective services and facilities, including access to employment, education and housing choices.

Success in growing Latrobe City as a single urban system will support growth within the Princes Highway corridor, including in the regional centres of Warragul/Drouin, Bairnsdale and Sale. Accessibility to employment opportunities and higher order services in Latrobe City will enhance these centres as alternative locations of choice.

Regional centres – Bairnsdale, Leongatha, Sale, Warragul/Drouin and Wonthaggi

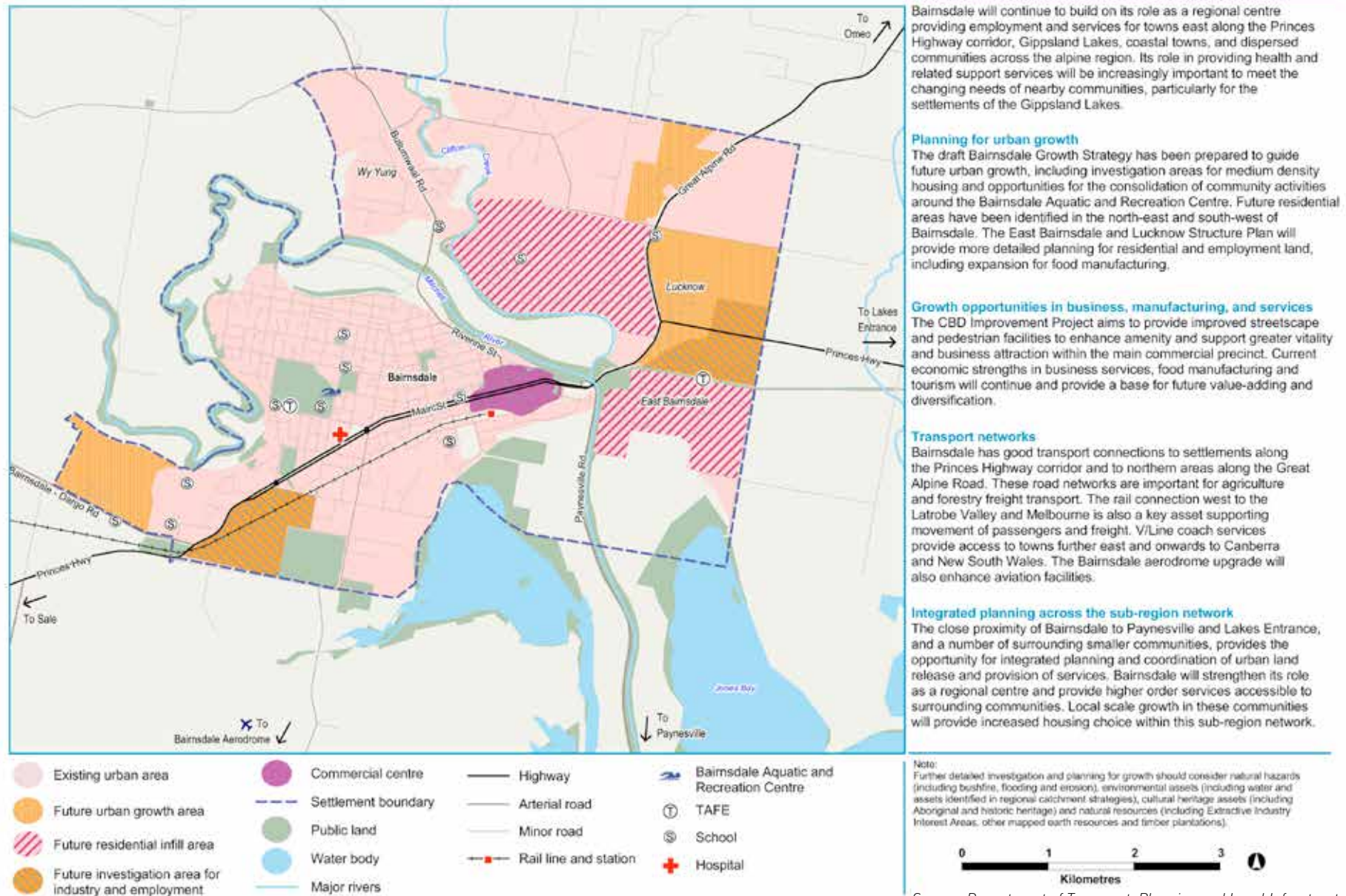
The network of regional centres identified on the settlement framework map (refer to Map 9) will accommodate projected urban growth together with the regional city. Sale and Bairnsdale, located along the Princes Highway corridor, will accommodate population growth in central and eastern parts of the region, as well as expand employment and service functions for dispersed and remote communities. Leongatha and Wonthaggi are connected via the Bass Coast and South Gippsland highways and will provide an increasingly important service role for the southern part of the region.

Warragul and Drouin are in close proximity to each other and have similar high rates of population growth. These centres will accommodate projected population growth in the western part of the region, with careful management of urban growth to focus commercial functions, and consolidate residential development to minimise encroachment onto agricultural and rural land.

Planning has been completed to accommodate the expected levels of growth in the regional centres. Framework plans for Bairnsdale, Leongatha, Sale, Warragul/Drouin and Wonthaggi are shown on Maps 11 to 15.

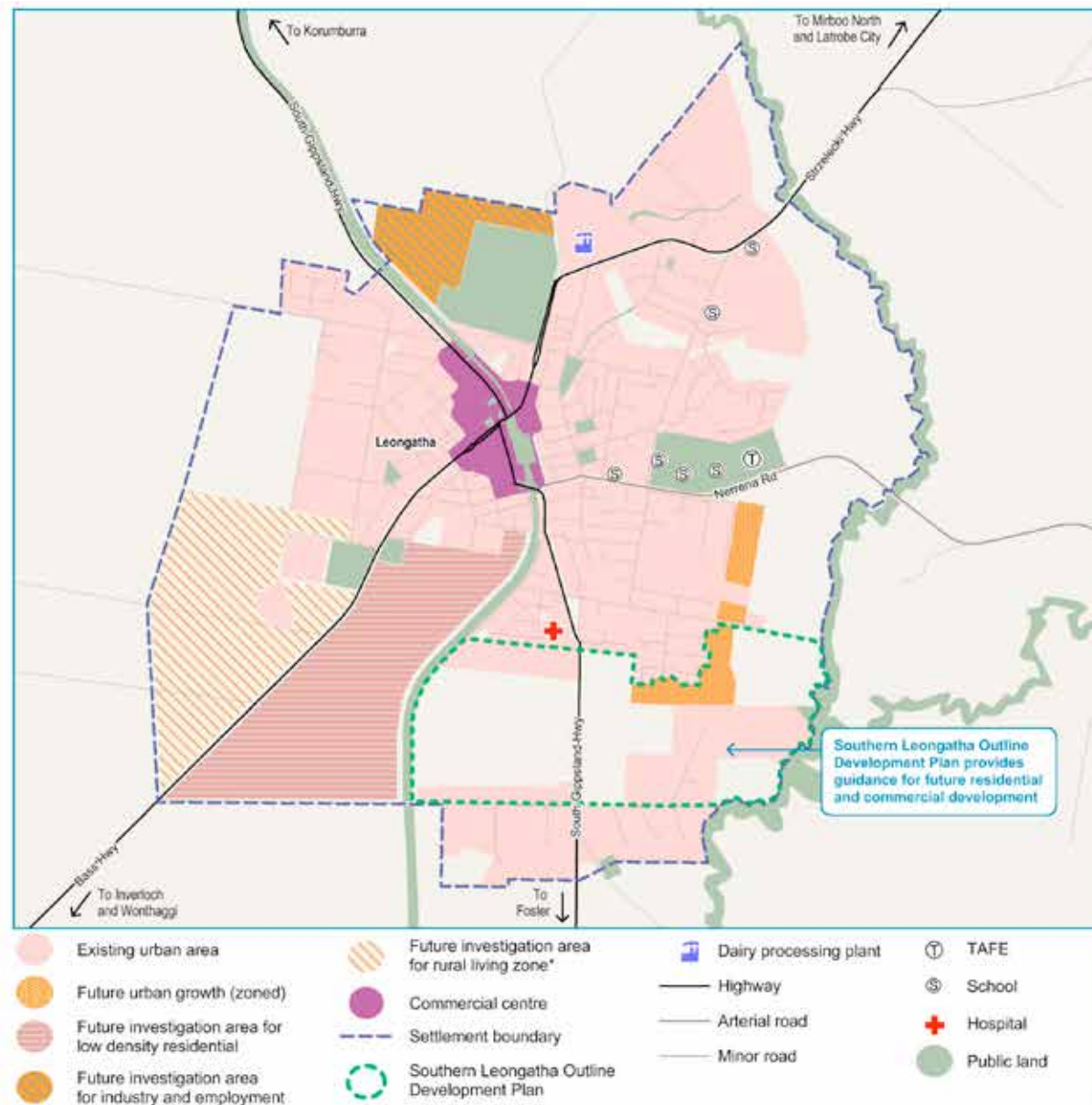
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Map 11: Bairnsdale framework plan



Source: Department of Transport, Planning and Local Infrastructure

Map 12: Leongatha framework plan



Leongatha will continue growing to accommodate future population growth and provide employment in business and industry sectors, as well as education, health and community services. Leongatha will provide higher order services with nearby Korumburra continuing to provide services to meet local needs.

Planning for urban growth

The Leongatha Framework Plan provides direction for long-term growth, including locations for future residential, commercial and industrial uses. The Southern Leongatha Outline Development Plan provides more detailed planning for residential and commercial development south of the existing urban area.

Due to the Tarwin River water supply catchment, all new development including land within the Rural Living Zone and Low Density Residential Zone, must be connected to reticulated sewerage.

Business and manufacturing growth opportunities

Leongatha provides a service centre for the dairy industry in southern Gippsland and includes a significant dairy processing facility. Continued investment in food manufacturing and value-adding to agricultural products will support future employment. South Gippsland Shire Council is preparing the Leongatha Industrial Land Supply Study to plan for future needs.

Transport networks

Growth will be facilitated by continued access to Melbourne and other parts of the region via the South Gippsland and Bass highways. The Strzelecki Highway provides a connection north to Latrobe City.

Integrated planning across the sub-region network

There are future opportunities to more closely integrate planning for Leongatha and Korumburra in terms of residential and employment land supply, and provision of community services.

Source: Department of Transport, Planning and Local Infrastructure

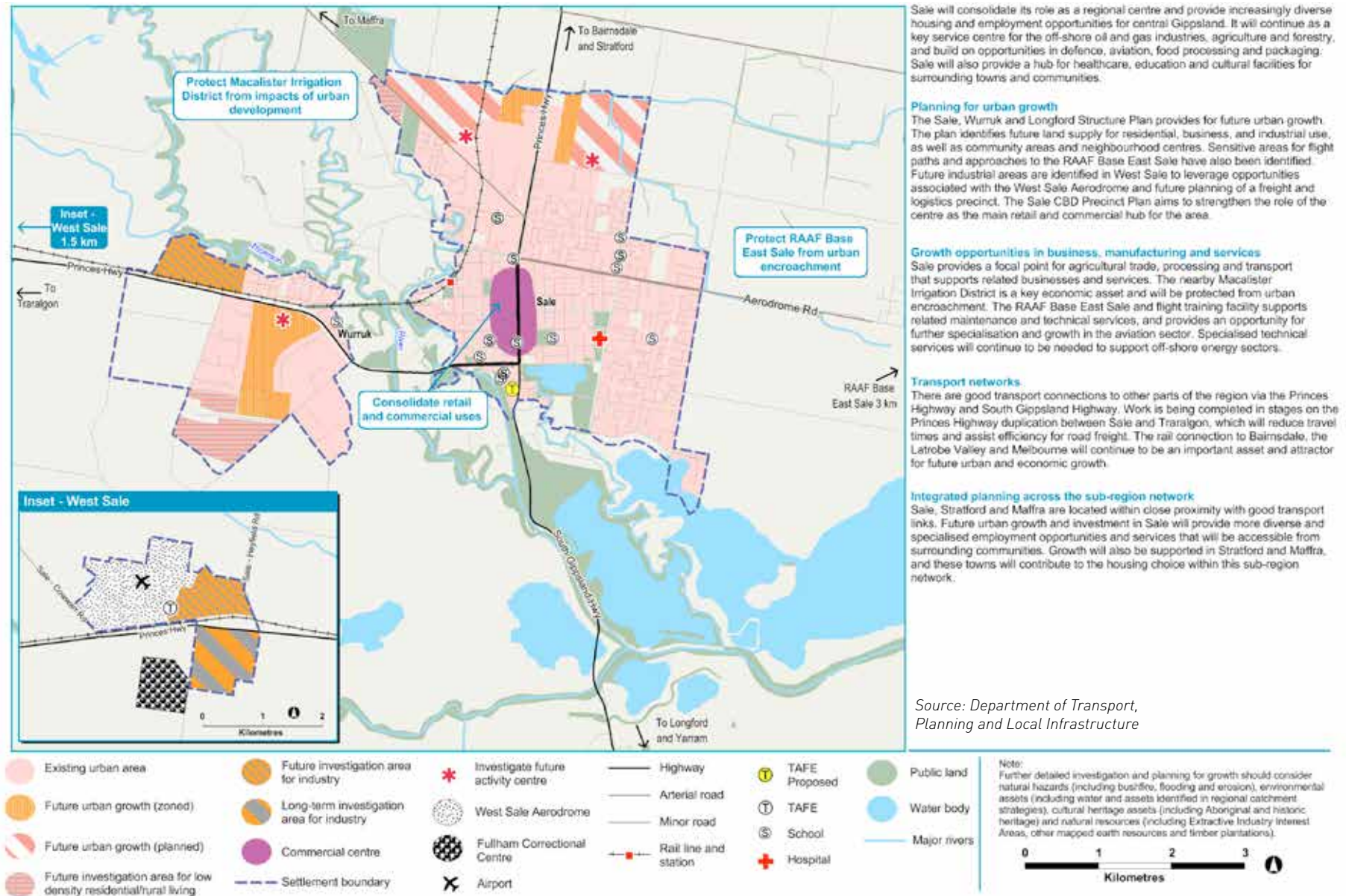
Note:
Further detailed investigation and planning for growth should consider natural hazards (including bushfire, flooding and erosion), environmental assets (including water and assets identified in regional catchment strategies), cultural heritage assets (including Aboriginal and historic heritage) and natural resources (including Extractive Industry Interest Areas, other mapped earth resources and timber plantations).

*Restricted by Environmental Significance Overlay 4 - sewage treatment plant and environs overlay.

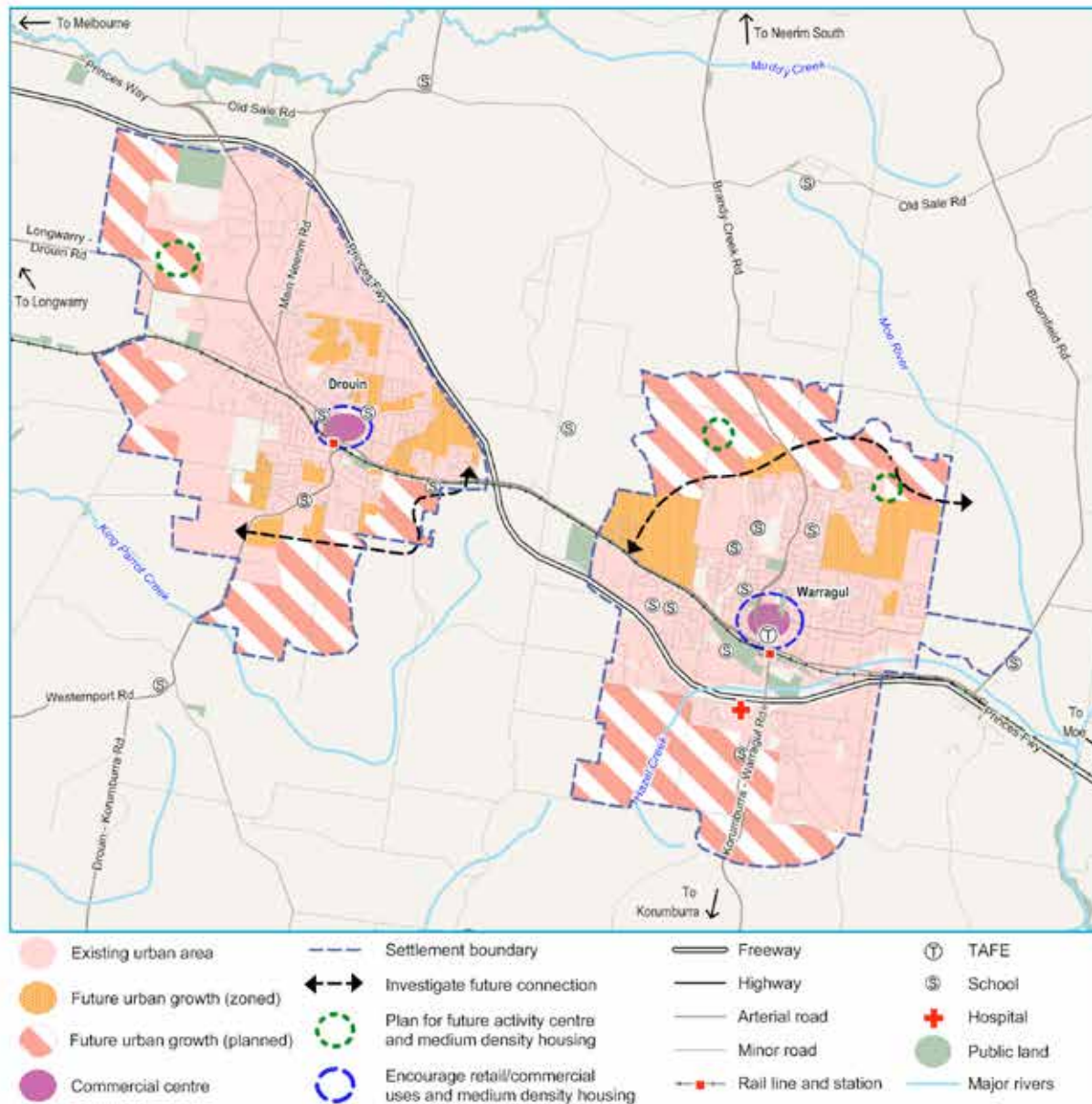


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Map 13: Sale framework plan



Map 14: Warragul/Drouin framework plan



Warragul will grow and attract services and emerge as the regional centre for the western part of Gippsland. Drouin will develop as a secondary centre. Future planning will focus business and retail functions within defined commercial centres, supporting diverse employment and opportunities for mixed use development including housing. Increased local job opportunities will reduce reliance on commuter travel to employment locations in the metropolitan area.

Planning for urban growth

The Baw Baw Settlement Management Plan identifies land supply for residential and employment uses and opportunities for medium density and urban infill in Warragul/Drouin. Planning for the commercial centres has been completed (refer to the Warragul Town Centre Strategy and the Drouin Town Centre Strategy).

Growth opportunities in business, manufacturing and services

Warragul/Drouin is the major service centre for surrounding agriculture and forestry areas and provides a hub for business services, retail and manufacturing. Further development of value-add to agricultural products, emerging niche markets and growth in specialised goods such as organics and hydroponics will generate demand for technical and research skills. Planned industrial expansion areas will provide new employment opportunities.

Transport networks

The Princes Highway and rail corridor provides good accessibility for passengers and freight to markets in Melbourne and access to other centres within the region. The Warragul station precinct project will enhance access to transport services by improving pedestrian links to rail and bus services and connections from the commercial centre.

Integrated planning across the sub-region network

Warragul will accommodate the majority of urban growth in the western part of the region with Drouin continuing its role as an important service centre. The close proximity of these centres requires greater coordination of future land development and infrastructure delivery.

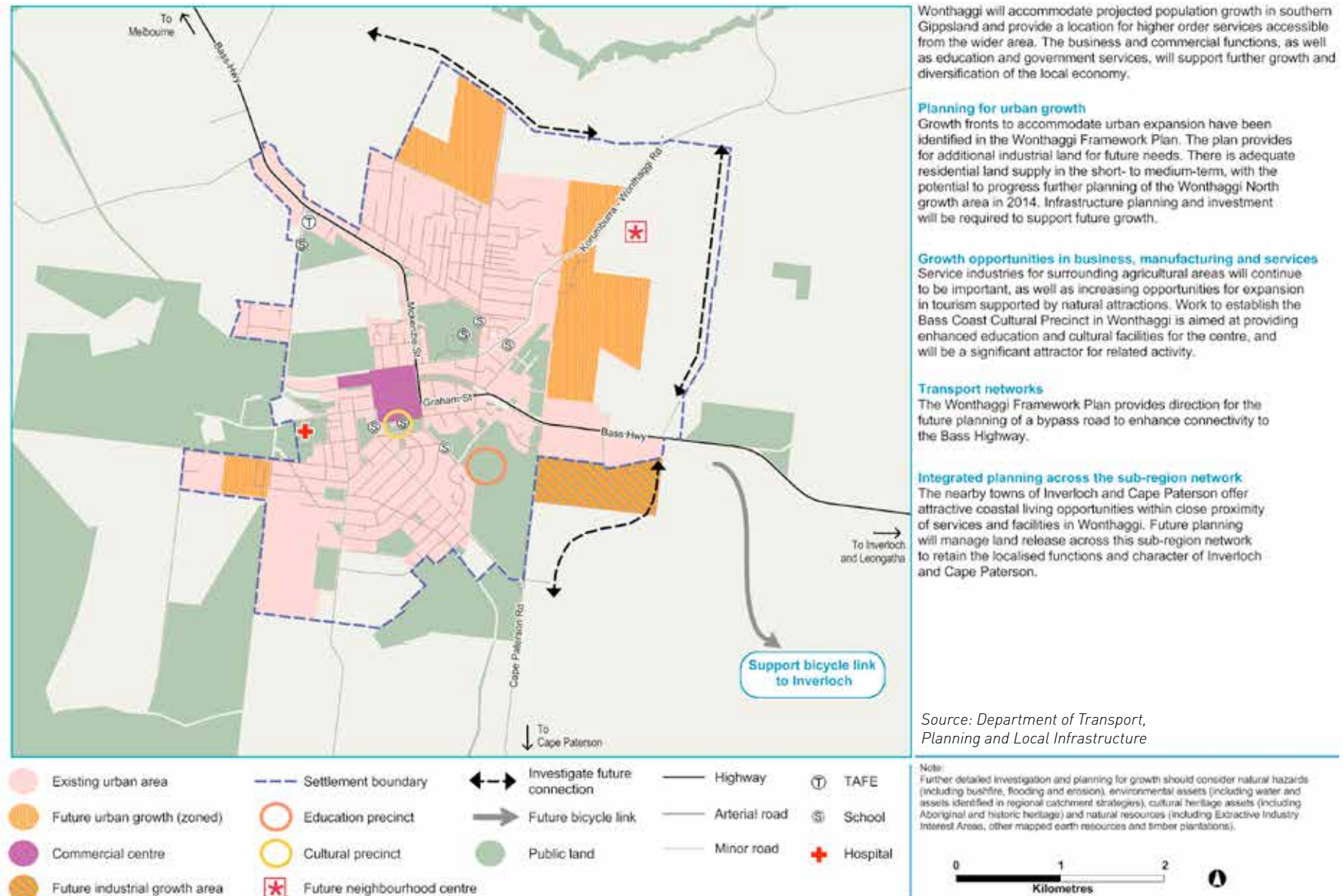
Source: Department of Transport, Planning and Local Infrastructure

Note: Further detailed investigation and planning for growth should consider natural hazards (including bushfires, flooding and erosion), environmental assets (including water and assets identified in regional catchment strategies), cultural heritage assets (including Aboriginal and historic heritage) and natural resources (including Extractive Industry Interest Areas, other mapped earth resources and timber plantations).



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Map 15: Wonthaggi framework plan



Source: Department of Transport, Planning and Local Infrastructure

Table 3: Indicative household demand and land supply

Regional centre	Indicative additional households 2041*	Urban Development Program potential residential yield
Bairnsdale	2950	<ul style="list-style-type: none"> 1950 lots within broad hectare residential zoned land 390 lots within future residential areas 280 lots within minor infill areas
Leongatha	790	<ul style="list-style-type: none"> 500 lots within broad hectare residential zoned land 1000 lots within future residential areas 120 lots within minor infill areas
Sale	1500	<ul style="list-style-type: none"> 590 lots within broad hectare residential zoned land 1200 lots within future residential areas (a further 2200 lots have been identified at Wurruk) 110 lots within minor infill areas
Warragul^	6930	<ul style="list-style-type: none"> 5300 lots within broad hectare residential zoned land 10,700 lots within future residential areas 800 lots within minor infill areas
Wonthaggi	2760	<ul style="list-style-type: none"> 2000 lots within broad hectare residential zoned land 2350 lots within future residential areas

* Indicative planning population estimates are necessary for planning at the town and sub-region level. DPCD's Victoria in Future 2012 population projections are not published below statistical local area level for 2011 to 2031, or below regional level for 2041. Indicative planning populations are broadly consistent with Victoria in Future 2012 but do not form part of the state government's official population projections.

^ Figures include Drouin

Other centres comprising sub-region networks

The regional settlement framework builds on the existing settlement pattern, recognising the opportunity to integrate planning and investment across sub-region networks centred around the regional centres. This approach is adopted in order to:

- provide a collaborative approach to managing growth, services, investment and employment between nearby regional centres and towns
- support growth and higher order services across the region
- increase efficient and effective interaction, servicing and infrastructure delivery between networked towns so that business and communities can access reciprocal benefits and attract higher levels of investment.

The settlement framework recognises five sub-region networks of towns (refer to Map 9).

The sub-region networks have been identified based on considerations including:

- share of projected consolidated town population relative to surrounding areas
- projected population of at least 1000 persons and planned capacity to accommodate change
- geographic proximity, transport links and employment connections
- range and availability of complementary services and functions
- opportunities to streamline investment and maximise access to shared services.

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These networks acknowledge the lead role of the respective regional centre as the primary location to accommodate urban growth, with secondary centres providing housing diversity and local services. The provision of social services and attraction of business investment within the networks will support communities across their broader catchment districts. The sub-region networks are comprised as follows:

Regional centre	Secondary centres	
Bairnsdale	Paynesville	Paynesville is located approximately 15 kilometres from Bairnsdale, and is a predominantly residential community with most industrial and employment services sourced from Bairnsdale.
Leongatha	Korumburra	Korumburra is located 14 kilometres from Leongatha via the South Gippsland Highway. These centres are of similar size and provide a broad range of services. Leongatha provides additional functions in government, education and health services.
Sale	Maffra Stratford	Both Maffra and Stratford are within 20 kilometres of Sale (and within 10 kilometres of each other). These secondary centres are projected to absorb the majority of population growth from within their surrounding area and will continue to access higher order services in Sale.
Warragul	Drouin	Warragul and Drouin are experiencing similarly high population growth. However Warragul will remain the larger centre and provides additional employment opportunities and services including the West Gippsland Hospital.
Wonthaggi	Inverloch Cape Paterson	Wonthaggi, Inverloch and Cape Paterson are within convenient commuting distance of each other. Wonthaggi provides a higher level of services particularly in retail/commercial, government, education and health services. Inverloch provides a more local scale of services. Cape Paterson includes areas identified for future urban growth and will rely on combined services at Inverloch and Wonthaggi.

Strategies for future land use

- Plan to accommodate projected urban growth within Latrobe City as the regional city, and the regional centres of Bairnsdale, Leongatha, Sale, Warragul/Drouin and Wonthaggi
- Support implementation of land use strategies and structure plans for the regional city and regional centres to accommodate growth over the next 20 to 30 years and to integrate delivery of their economic, environmental, social, infrastructure and transport needs
- Prepare a strategy for the long-term growth of Latrobe City as a single urban system, providing a catalyst for change and a driver for growth more broadly across Gippsland
- Support the development of sub-region network strategies that attract, facilitate and consolidate future growth within the regional centres and secondary centres by: better coordinating investment and distribution of facilities, building on complementary town roles, fostering economic growth, enhancing access to higher order services from across the region, improving connectivity and applying development contributions
- Support the continuing role of towns and small settlements in providing services to their districts, recognising their relationships and dependencies with larger towns
- Support heritage conservation and urban design initiatives to strengthen liveability and identity
- Prepare a housing strategy for Gippsland to investigate opportunities to achieve diverse and affordable housing within major cities and centres that meets the needs of the community
- Prepare a strategy to increase demographic diversity and youth retention, which considers initiatives such as marketing, employment opportunities and use of education facilities
- Plan for increased demand on services and infrastructure in towns with high holiday home ownership as these become the primary place of residence

14. Regional infrastructure

Future directions

- Work with utility and service agencies to optimise access to gas, electricity, drainage, water, sewerage and telecommunications and cater for a growing population and economy across the region
- Support road, rail and port improvements across Gippsland and beyond, particularly to markets and employment
- Provide health, education, cultural and sporting facilities to meet local needs in locations that are accessible and convenient to the people who will use them

The timely provision of infrastructure and services is required to support future growth and change in the Gippsland region. The delivery of an appropriate settlement pattern where population fluctuations are both predicted and sequenced is necessary to achieve growth in a sustainable manner. In some instances existing services and assets may have to be augmented or replicated to accommodate new levels of demand.

This plan aims to identify where there may be increased demand for infrastructure services based on projected population and housing growth, potential development of new industries or expansion of existing industries.

The plan provides a framework to align the supply and demand strategies of infrastructure service providers and their customers. The plan promotes the importance of both demand management and augmentation of supply networks. It also supports the need for future infrastructure planning to ensure infrastructure delivery keeps pace with population and economic growth, and supports the role of the regional city and centres in accommodating this growth.

14.1 Water, energy and utilities

Growth in settlements and economic activity throughout the Gippsland region will result in demand for additional water, energy and utility infrastructure. Efficient use of existing systems and identification and protection of utility infrastructure corridors have been considered. The projected population and settlement pattern take into account high level planning for currently planned and anticipated service utilities.

Gas and electricity

The Gippsland region has an extensive network of electricity and gas transmission infrastructure administered by asset managers and energy retailers. Electricity infrastructure is comprised of generating sources located in the Latrobe Valley, high voltage transmission lines, terminal stations, sub-transmission lines, and lower voltage distribution and connection lines to energy users. There are some constraints in the electricity supply network, particularly for supply to areas east of Bairnsdale. The region's electricity network owner, SP AusNet, has a long-term development plan outlining augmentation works required to meet expected load growth to 2041.

Gas and electricity supply planning for the major urban centres and towns has allowed for anticipated population and economic growth (refer to Table 4). Despite overall planned utility provision and upgrades, there are known shortfalls with respect to some services for these key towns: electricity supply (Wonthaggi, Inverloch, Sale, Bairnsdale and Warragul/Drouin); and gas supply (Bairnsdale, Paynesville, Sale and Warragul/Drouin). Securing a reticulated gas supply for Phillip Island has been identified as an important issue to facilitate further tourism and business investment on the island.

Telecommunications (including National Broadband Network)

Planning for future urban and economic growth should be flexible and responsive to make best use of new telecommunications technology and infrastructure as it becomes available. The introduction of the National Broadband Network will provide improved access to education and health services, and provide businesses with the opportunity to expand online sales and broaden their customer base to compete nationally and globally. Gippsland's planning authorities should work with telecommunications providers to ensure a consistent approach for infrastructure design and placement in growth areas and to support the requirements of the national network.

Water supply and management

The Gippsland region has important water supply assets including a network of reservoirs, the desalination plant near Wonthaggi, Gippsland Water Factory, and the South Gippsland Water saline outfall transfer system.

Rural and urban water corporations have prepared water supply demand strategies to manage future supplies of water for urban and industrial use with the aim of maintaining reliable water supply. These strategies include demand management and priority for water conservation, and options to augment supply infrastructure. When future integrated water cycle strategies⁷ are developed, they will need to consider the implications of the plan on future water demand and supply.

Planning for future urban and economic development should incorporate measures to reduce demand for water where possible, including through water sensitive urban design and opportunities for urban water harvesting. New urban areas should include provision of recycled water to reduce demand for potable water.

Across Gippsland water supply has been assessed as meeting domestic and commercial demand for the short- to medium-term. For Phillip Island and areas around Westernport, the supply system requires no immediate augmentation.

Recycled water

The Gippsland Water Factory is a key asset for treating wastewater and producing recycled water for a range of uses within the region. The region's water authorities also produce recycled water for use in their operations. Continued innovation and investment in recycled water could alleviate demand on potable water supply and enhance the long-term security of the region's water supplies. The region should support opportunities to integrate recycled water supply networks within urban growth areas including commercial and industrial uses.

Table 4: Summary of infrastructure considerations

Settlement	Local road & drainage	Water	Sewerage	Gas	Electricity
Latrobe City					
Churchill	*	*	✓✓	*	✓✓✓
Moe	✓	✓✓	✓	✓	✓✓
Morwell	✓	✓✓	✓✓	✓	✓✓
Traralgon	✓	✓	✓✓	✓	✓✓
Regional Centres					
Bairnsdale	✓	*	✓✓	*	✓
Leongatha	✓	✓✓	✓✓	✓✓✓	✓✓
Sale	*	✓✓✓	✓	✓	✓
Warragul/Drouin	✓✓	✓✓	✓✓	*	✓
Wonthaggi	✓	✓✓	✓✓	✓✓	✓
Network can support growth					✓✓✓
May require some upgrade/augmentation to support growth					✓✓
Significant infrastructure investment may be needed to accommodate growth					✓
Capacity to accommodate growth to be determined					*

⁷ Integrated water cycle strategies will supersede water supply demand strategies by 2017.

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Waste management

The region has an existing framework to manage municipal and solid industrial waste through the functions of the Gippsland Regional Waste Management Group. Under state government legislation, the Gippsland Regional Waste Management Group is responsible for planning for the management of municipal waste through partnerships within the region, and supporting and implementing state government policies and strategies relating to waste.

The region has an existing network of solid waste management infrastructure comprising council landfills, resource recovery centres, materials recovery facilities, organics processors, and construction and demolition resource recovery.

One of the challenges for the region is dealing with the large increase in waste generation that corresponds with the summer peak tourist season. The capacity of public waste infrastructure is strained during these peak periods and this limits opportunities to recover and divert waste from landfill. Other challenges relate to the mix of urban settlements and rural areas within the region and the diverse streams of domestic and industrial waste this produces.

The Gippsland Regional Waste Management Group has set out future directions and priorities to upgrade many existing facilities to improve service delivery and broaden the suite of material recovered. A number of smaller landfill sites are expected to reach capacity over the next five years and will require rehabilitation measures. Some of these facilities will be replaced by resource recovery centres.

This plan supports an ongoing, coordinated approach to managing solid waste through a network of landfill and recovery centres that are accessible for domestic and industrial users. Local strategic planning should support and facilitate the development of waste facilities including appropriate amenity buffers to secure their operations in the long term. Further information about future waste management and infrastructure is included in Getting Full Value – The Victorian Waste and Resource Recovery Policy.

Strategies for future land use

- Work with water, drainage, energy, and telecommunications agencies to prepare strategic infrastructure plans to provide utility servicing infrastructure to growth areas across the region
- Support ongoing investment in water infrastructure and management of water resources to enhance security and efficiency of water supply to industry and urban areas
- Support the provision of adequate facilities to manage the region's solid waste
- Give priority to development proposals that maximise the use of existing infrastructure and minimise the need for new infrastructure

14.2 Transport networks

The Gippsland transport network requires ongoing planning and review to ensure it remains efficient, well connected and reliable. It is critical for the network to enable regional businesses to efficiently manage their supply chain requirements and for the community to conveniently access employment, services and recreational activities, and visit family and friends.

Businesses and the regional economy rely on a mature freight system including Victoria's connectivity to the Australia-wide system. Regional connections to port facilities in Melbourne and other hubs such as Portland, Geelong, Hastings and interstate to Eden are essential, as are linkages to Melbourne Airport, and increasingly to Avalon Airport and other regional airports.

Regional ports and airports also host important local services. For Gippsland this includes the East Sale Royal Australian Air Force Base, aircraft manufacturing at Latrobe Regional Airport, light aircraft charter services at Latrobe and West Sale airports, and recreational or agricultural crop spraying flights from small airports throughout Gippsland. Local ports include the Barry Beach Marine Terminal at Corner Inlet, which handles offshore oil and gas provisioning and a number of ports that support commercial fishing fleets including Lakes Entrance, which is home to the largest commercial fishing fleet in Victoria.

This plan considers the community's transport access in a growing Gippsland, including the need to travel within the region to access employment, recreation and services such as the university campus at Churchill and regional hospitals at Bairnsdale, Morwell, Sale, Traralgon and Warragul. It also considers the need to access higher order services outside the region, particularly Melbourne Airport for domestic and international flights.

Through the following future directions (illustrated on Map 16), the plan identifies regionally significant transport opportunities that will help manage and promote regional growth.

Network capacity and efficiency

As Gippsland grows, sufficient network capacity must be available to ensure efficient transport both to and from the region. This is especially important for the major transport corridors of the Princes and South Gippsland highways and the Gippsland rail line.

The Australian Government is undertaking a strategic study regarding the implementation of high-speed rail (HSR) on the east coast of Australia. Once fully operational, express journey times of less than three hours between Melbourne-Sydney could be achievable. Phase two of the study depicts a preferred alignment for the HSR system between Melbourne, Canberra, Sydney and Brisbane. The Gippsland Regional Development Australia Committee and the Gippsland Regional Management Forum support a route that traverses the Gippsland region.

The national freight task is projected to double over the next decade and this is likely to put additional strain on Gippsland's road network as freight such as fresh and processed food is likely to continue to be moved by road.

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A number of transport projects are being planned and developed that may help improve the capacity and efficiency of the region's transport system. These include:

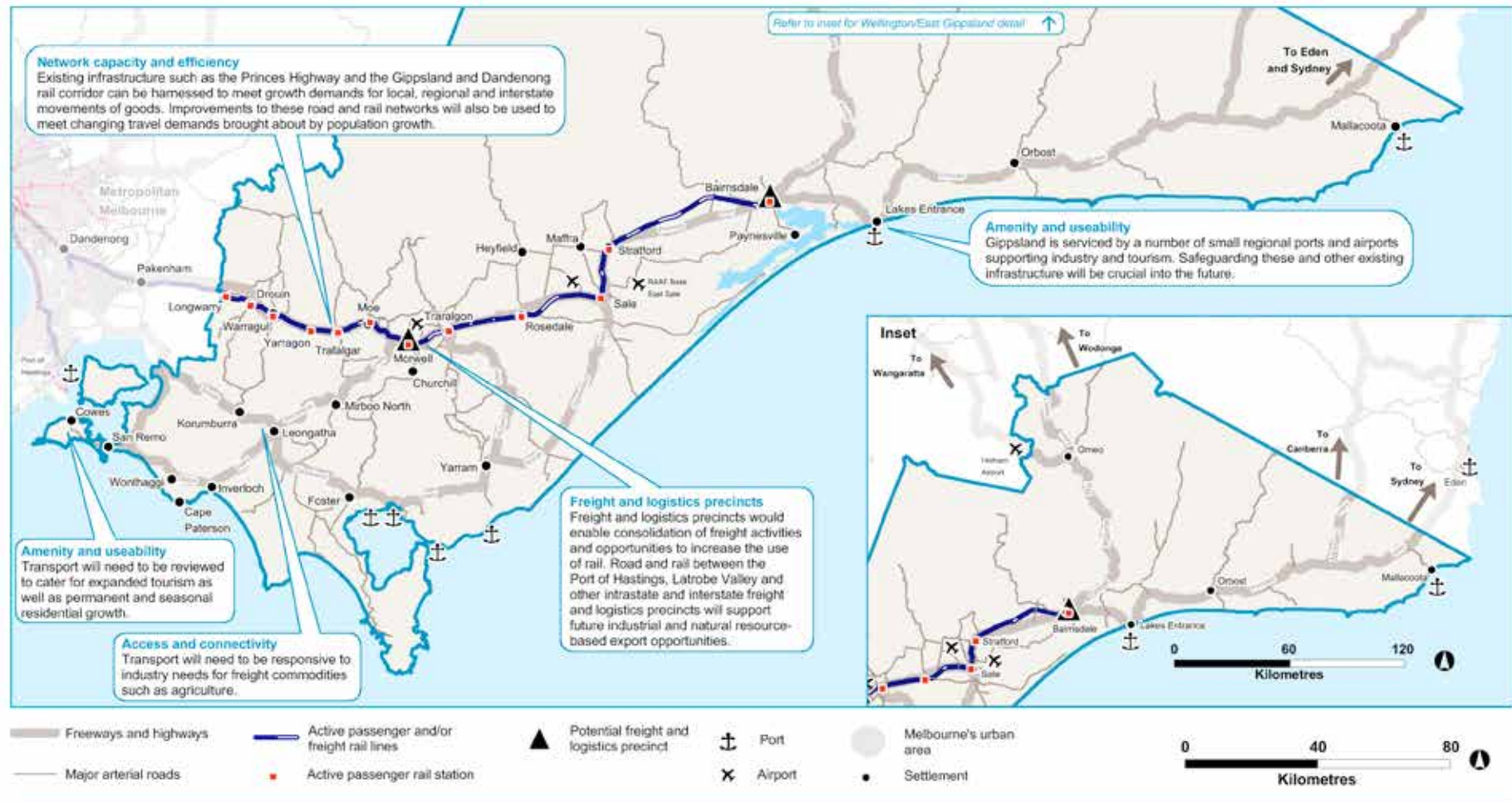
- expanding road space such as the duplication of the Princes Highway between Traralgon and Sale, and a potential Princes Highway Traralgon Bypass for which land has been reserved in the Latrobe Planning Scheme through a Public Acquisition Overlay
- improving and modifying the network of public transport services to better meet market needs
- improving and modifying the network of cycling and walking tracks and trails
- maximising use of existing infrastructure such as higher productivity freight vehicles on designated routes, encouraging road freight to operate in non-peak periods and timetabling enhancements on the rail network
- the proposed East West Link to improve access to the Port of Melbourne and Melbourne Airport, and support access for a growing population in Gippsland and Melbourne's south-east growth corridor
- enhancing rail capacity via passing loops in conjunction with the Dandenong Rail Capacity Program and providing additional train paths to retain direct linkages to Melbourne's central business district through the Melbourne Metro project
- developing the Port of Hastings as Victoria's next container port
- support the Port of Hastings transport studies to plan for efficient transport access based on industry needs associated with the port's development.

Access and connectivity

Efficient transport connections are needed to provide access to services and employment across Gippsland as well as inter-regional destinations. As the region's population continues to grow and change, it is important to plan transport infrastructure projects to promote enhanced connectivity, capitalise on economic opportunities and monitor the demand and the viability of providing additional public transport services. Planning for new residential developments, industry and employment areas should be integrated into the existing transport network and designed with good pedestrian permeability and internal road layouts conducive to public transport provision.

Improved access to markets is critical for the prosperity of the region's agricultural, forestry and earth resources sectors. To enable processed products to be exported from the region, there is a need for good transport access to port facilities. This could be achieved by integrated use of the existing road and rail network or potentially the development of new facilities such as a rail link from the region to the Port of Hastings.

Map 16: Future directions for transport

**Supply chains**

A strategic approach to local road management for freight transport as a component of the supply chain will be required, particularly in areas with expanding dairy and horticultural industries.

Technological advancements

The rollout of the National Broadband Network will change the way that people manage their work and lives. Transport plans will need to be flexible enough to adapt to changing demand patterns and ensure infrastructure and services fit future demand.

Safe, reliable and resilient network

It is essential that the transport network is well maintained and able to withstand disruption from a variety of sources including natural hazards. The role of settlements and their future growth capacity should be informed by the extent of existing infrastructure and the degree of intra-regional and inter-regional connectivity.

Access and connectivity

Growth will not be experienced in all areas. Maintaining access for smaller communities to education, employment and other facilities will be critical as the demography changes. Future expansion of community transport and taking resources to the people may be required.

Source: Department of Transport, Planning and Local Infrastructure

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Opportunities for ensuring access and connectivity exist around:

- connecting the region to key gateways and markets within and outside the region such as Melbourne, international gateways, interstate and other regional cities. One example in the Gippsland region is to use overtaking lanes on the Strzelecki and Hyland highways to improve access to Gippsland's dairy industry
- harmonising cross-border vehicle legislation and rules
- developing enhanced community transport and mobile provision of essential services for remote, sparsely populated areas of high community need
- improving and modifying public transport services to better meet market needs and planning new residential developments to integrate with public transport services
- improving the accessibility of public transport facilities through *Disability Discrimination Act 1992* compliance and bicycle access
- Supporting the Port of Hastings transport studies to plan for efficient transport access based on industry needs associated with the port's development.

Freight and logistics precincts

Gippsland relies on good access to freight gateways to deliver products to market and receive goods. Transport access to Melbourne Airport, the Port of Melbourne and the Port of Geelong is essential for air and sea freight. These outcomes are underpinned by relevant policies such as the Gippsland Freight Strategy. Planning should build on transport policy direction and support important freight and logistics precincts and their access. This includes the need to protect Gippsland's existing transport facilities and their surroundings from encroachment. It also involves retaining flexibility for possible future expansion and additional freight facility requirements due to export opportunities for natural resource commodities.

The State Government has identified the Port of Hastings as a future container terminal port. The expanded Port of Hastings facility could provide an alternative export gateway for Gippsland's container freight task.

Existing infrastructure facilities such as rail freight facilities in Morwell could provide for the interchange of freight between road and rail transport, and would benefit from the development of a freight and logistics precinct in and around those facilities. This would enable the potential consolidation of freight activities and opportunities to increase the use of rail, when available. In addition, the potential to develop a freight precinct with intermodal facilities at Lyndhurst, in metropolitan Melbourne, could enhance access to key transport corridors and ports for Gippsland commodities. Gippsland has a number of food producing facilities that generate significant road freight. Transport planning to improve access to these facilities would reduce costs to business and enhance their competitiveness.

Opportunities for developing freight and logistics precincts could include:

- seaports such as container, bulk, and general cargo in Gippsland, which could include a rail corridor reservation from the Gippsland rail line to the Port of Hastings
- airports, such as international, interstate and regional
- intermodal freight terminals, such as progressing opportunities for freight and logistics precincts at Morwell and Bairnsdale
- activity specific centres, such as distribution centres and processing plants.

Safe, reliable and resilient network

The Gippsland transport network provides access for the community to settlements, employment, education, and retail and health facilities. It is important the network is well maintained and resilient to major disruption and there is unimpeded access. Impediments can arise from natural hazards such as bushfire and flood but also from changes in the commodities being carried, with the potential use of larger vehicles and changes in the operations of the logistics industry.

Opportunities for providing a reliable and resilient network could involve:

- contingency plans for major disruption as a result of flood or bushfire
- maintenance of rail and road networks
- reducing on-time running limitations
- alternative fuelled vehicles.

Technological advancements

Technological advancements such as the rollout of the National Broadband Network may provide access to a greater range of services from home. The health and education sectors highlight the potential of providing services online. The National Broadband Network may also provide increased opportunity for home-based businesses.

New vehicle designs could also lessen the environmental impacts of transport and improve productivity and safety of vehicles.

Supply chains

Understanding how local roads connect to the main arterial road network could provide greater efficiencies in supply chains and encourage moves towards higher productivity freight vehicles on designated routes. It is important to recognise the strategic importance of the freight transport network as a component of the supply chain, particularly for the export of food products, paper, coal, horticulture and manufacturing.

Increasing road use and vehicle capacity demands may mean local maintenance funding and weight restrictions, for example, need to be reviewed into the future.

Opportunities to better understand efficient supply chains exist around:

- understanding relationships, movements and modes between the farm-gate, market, distribution centres and gateways for various commodities such as extractive industries and agricultural products
- food processing and fisheries in the region
- future coal export possibilities
- road and rail freight capacity constraints
- intermodal terminal requirements and consolidation opportunities
- technology advancements.

PART C | TOWARDS THE REGIONAL GROWTH PLAN

Amenity and useability

Improved amenity and useability within the transport system will promote the wellbeing of users and help attract people to the region. Incorporating pedestrian and bicycle networks and infrastructure in town centres, and planning for bicycle parking and storage at key destinations can facilitate higher rates of participation in walking and cycling as a transport option. Cycling and walking as recreation are also considerations for overall transport system design.

Transport access should be considered at the subdivision stage. Subdivision guidelines can encourage new development to be designed to include useability and amenity.

Opportunities for ensuring amenity and useability include:

- tourist routes for all users, including cyclists. In Gippsland this could build on the opportunities of the region's recreational walking and cycling trails to attract users and tourists, particularly to the region's rail trails that offer recreational and sustainable transport between towns
- facilities such as wayside rest areas, signage and information hubs
- marketing such as package tours for day trips
- town centre improvements
- road use management such as VicRoads' Smart Roads road use identification.

Strategies for future land use

- Support improvements to the region's road network including the Princes, Bass and South Gippsland highways, connections to ports, and roads running north-south through the region
- Improve connections out of the region to metropolitan Melbourne, Melbourne Airport, to other states and to other Victorian regions
- Support improvements to the Gippsland and Dandenong rail line
- Support the Port of Hastings transport studies to plan for efficient transport access based on industry needs associated with the port's development
- Support investigations into the potential need for other deep water port facilities as they emerge to support industry and exports
- Support the provision of public transport services for those without access to private vehicles and to improve access to services and employment
- Improve access to key freight routes so that regional businesses can enhance their supply chain efficiency
- Support the development of freight and logistics precincts in Morwell and Bairnsdale, and improvements to key transport links

14.3 Social infrastructure

Social infrastructure refers to community facilities and services that help the community meet its social needs and promote wellbeing. These facilities and services may include education, health, open space and recreation, arts and cultural facilities and community meeting places. More broadly it can encompass community meeting places, volunteer organisations and the social networks that support them. Social infrastructure planning occurs across all levels of government to align with community needs from a local scale to the regional or national scale.

Considering social infrastructure at a regional scale involves assessment and planning for high level facilities and services commensurate with population size and distribution, and investigation of the regional community's current and future needs. At the regional scale, social infrastructure may include government services, hospitals, tertiary or other further education facilities, performing arts or convention centres, museums and central libraries.

When planning for future social infrastructure in Gippsland it will be important to assess projected population growth and the demographic profile of the future community to determine likely needs. This may include consideration of age, cultural background, household structures and the needs of specific groups such as people with disabilities. It will also be necessary to assess the range, capacity and utilisation of existing social infrastructure to better plan for future needs. In some cases existing social infrastructure facilities may be modified or enhanced to meet changing needs. In the future there may be a need for more flexible delivery of social infrastructure including enhanced mobile and similar outreach services.

Social infrastructure in Gippsland includes facilities such as hospitals, tertiary education and training facilities, regional cultural and sporting facilities such as stadiums and arts centres, and various volunteer community and civic organisations.

Health and education

The Gippsland region has a network of public and private hospitals, community health services and bush nursing services distributed across the major centres of Latrobe City, Warragul, Wonthaggi, Sale and Bairnsdale. The Latrobe Regional Hospital includes a specialist cancer centre and supporting accommodation. Redevelopment of the Leongatha Hospital is currently underway to provide improved services. The Gippsland Medical School at the university campus at Churchill is also a key health infrastructure asset.

Health indicators for Gippsland residents are broadly in line with the rest of regional Victoria but are somewhat lower than indicators for metropolitan Melbourne, in part due to lower incomes and reduced access to medical services in remote areas. To address these issues, health promotion in Gippsland prioritises physical activity, healthy eating, mental health promotion and sexual and reproductive health. Strategic planning for future urban areas can support these priorities through provision of active and passive open space and access to pedestrian and bicycle networks.

The role of the education sector is important to support efforts to transition and diversify the regional economy. The Latrobe Valley Industry and Employment Roadmap highlights potential linkages among education and research institutions and emerging industry sectors in renewable energy, low-carbon technology, food processing and advanced manufacturing.

Gippsland has existing research and development and tertiary education facilities located throughout the region, most notably at Ellinbank and Churchill. The Gippsland Regional Plan proposed to enhance the delivery of these services through the development of a Centre for Sustainable Industries to increase the economic strength and capability of key regional industries through improvements in energy usage, commoditised product value, waste management, production processes and transitioning to

PART C | TOWARDS THE REGIONAL GROWTH PLAN

a low-carbon economy. Such an approach would encourage research into the key challenges facing the region in terms of competitiveness and economic viability, ensure regional employers embrace cutting edge approaches and technologies, and facilitate industry-focused educational activities to address skill needs.

This plan provides a land use context to support tertiary education and research and development in the region including the establishment of a network of technology enabled learning centres in Bairnsdale, Sale, Traralgon, Churchill, Warragul, Leongatha and Wonthaggi. The regional settlement framework supports these centres as appropriate locations for tertiary and other research institutions. For more information refer to the Gippsland Tertiary Education Plan.

Community, cultural and sports facilities

Community facilities such as public halls and meeting places are important for maintaining volunteer and civic organisations, which are significant contributors to community cohesion in small and remote settlements. Sporting clubs, recreational groups and emergency services such as the Country Fire Authority rely on volunteers and their support networks to continue to provide services for regional and remote communities.

Access to art galleries, performing arts centres and major sports facilities is important to meet the needs of a regional community to help provide more diverse cultural experiences, and to attract and retain a broader range of social groups. Festivals, sporting events, exhibitions and cultural performances help promote the identity and diversity of Gippsland and contribute as attractions and important economic drivers that complement the landscape, wildlife or other nature-based activities in the region.

Gippsland has a range of cultural facilities including regional art galleries in Bairnsdale, Sale and Morwell, and performing arts centres in Sale, Traralgon and Warragul. Planning and programming of activities at these facilities needs to be coordinated, providing tourists and residents with a more diverse offer that encourages extended visits. Other high profile sporting assets in the region include the Traralgon Tennis Complex, Phillip Island as the venue for the Australian Motorcycle Grand Prix, and the Gippsland Regional Sports Complex in Sale. The proposed Gippsland Aquatic Centre would be a significant addition to the region's sports infrastructure.

Regional communities will continue to access and enjoy Gippsland's regional parks, and walking and cycle trails. These spaces are important for recreation and maintaining active and healthy communities. Planning to respond to community needs may require future investigation of supporting infrastructure within regional parks and trails. Future planning should be done in coordination with relevant agencies such as Parks Victoria.

Strategies for future land use

- Provide regional social infrastructure in the regional city and centres, as described in the settlement framework, to meet the high level service needs for residents across the region. Projected population growth and demographic profile, including anticipated growth in the proportion of aged persons, will inform considerations for hospital, allied health and aged care infrastructure planning and upgrades
- Encourage local social infrastructure, such as schools, community centres and health services, to be co-located on shared sites and to be designed as multi-purpose facilities
- Plan for flexible and/or mobile provision of essential services for dispersed and remote communities including enhanced community transport options

PART D | REGIONAL GROWTH PLAN

This part of the Gippsland Regional Growth Plan brings together all of the elements of the regional land use framework including economy, environment and landscape, settlement and regional infrastructure to identify the plan for growth and change over the next 30 years. It provides direction on where future growth should occur and is informed by advice, analysis, investigation and community feedback.

15. Future directions for regional growth

This plan identifies areas where there are potential conflicts between land uses. These are most prominent in the case of earth resources and strategic agricultural land, and also in relation to urban settlement pressures in high amenity rural or coastal landscapes. In some cases, these conflicts raise questions about the economic value of resources versus the values derived from environmental and cultural assets such as habitat and landscape.

This plan is intended to provide policy direction to assist decision-making with regard to land use outcomes. The principles outlined in Section 10 Principles to achieve the vision have informed the specific objectives and strategies developed for the economy, environment and heritage, settlement and infrastructure. The strategies in Part C provide the basis for more detailed work to be included in the Implementation Plan (see Part E). Key directions for growth across the region are shown on Map 17 and a summary of the objectives and strategies with regional spatial implications are included in Table 5.

Table 5: Overview of strategies for regional growth

Principles	Issues	Future directions	Strategies (see Map 17 for further direction)
1. Strengthen economic resilience by growing a more diverse economy, which is supported by new investment, innovation and value-adding in traditional strengths	<ul style="list-style-type: none"> Relatively narrow economic base Key economic assets and resources vulnerable to change Water, brown coal, oil and gas and resources of state significance Capacity for primary industry sectors to drive high growth knowledge industries and research and development 	Vibrant and prosperous commercial centres	<ul style="list-style-type: none"> Encourage vibrant and prosperous commercial and service activities within clearly defined town centres that respond to changing population and market conditions
		Diverse service and manufacturing industries	<ul style="list-style-type: none"> Develop industry sectors with strong prospects for increased employment
		Productive and innovative agriculture, forestry and fisheries	<ul style="list-style-type: none"> Avoid loss of areas of strategic significance (agriculture and forestry) by critically assessing proposals for non-agricultural or non-forestry use, informed by expert agribusiness advice Encourage production and processing plants that add value to local agricultural, forestry and fisheries products Protect productive land and irrigation assets that help grow the state as an important food bowl for Australia and Asia
		Strengthen the energy sector	<ul style="list-style-type: none"> Support transition to a low-carbon economy with renewable energy and greenhouse emission reductions including geothermal, clean coal processing, and carbon capture and storage Support development of coal-to-products industries (diesel, fertiliser, gas) Identify, manage and facilitate access to earth resources where appropriate, including sand and stone, minerals and renewable energy potential Support continuing production from the region's oil and gas fields Prepare a new Gippsland Coalfields Planning and Investment Framework Develop the region's research and development profile
		Rejuvenation and expansion of regional tourism	<ul style="list-style-type: none"> Strengthen tourism in strategic tourism investment areas Encourage tourism development within existing urban settlements to maximise access to infrastructure, services and labour and to minimise impacts on the environment and exposure to natural hazards

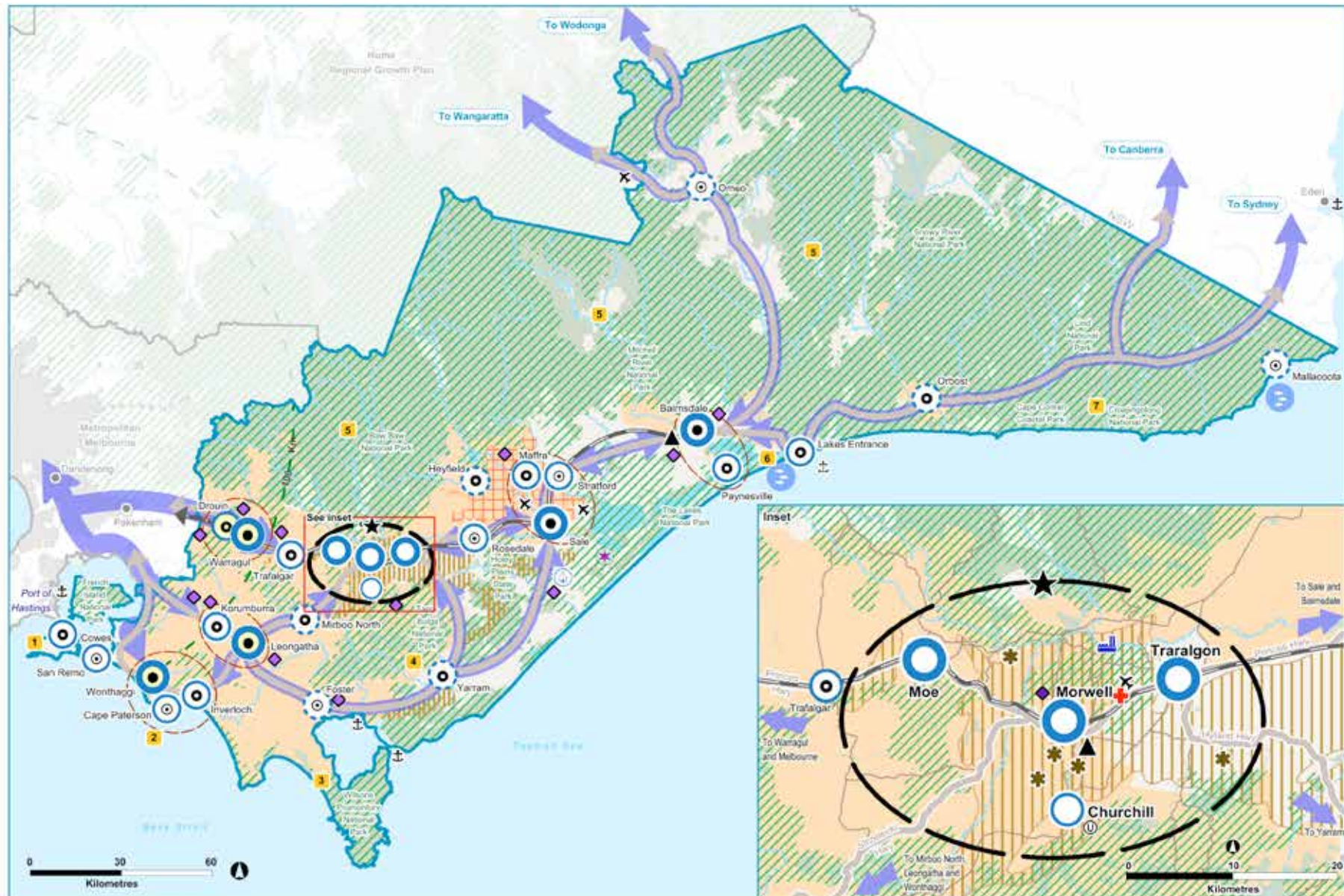
PART D | REGIONAL GROWTH PLAN

Principles	Issues	Future directions	Strategies (see Map 17 for further direction)
2. Promote a healthy environment by valuing Gippsland's environmental and heritage assets, and by minimising the region's exposure to natural hazards and risks	<ul style="list-style-type: none"> Competing demands on environmental and cultural heritage assets and landscapes Habitat fragmentation and reduced resilience to change High exposure to natural hazards, especially bushfire, flood and coastal hazards 	Manage risks from natural hazards	<ul style="list-style-type: none"> Direct urban growth away from areas of high risk from bushfire, flood and coastal inundation
		Manage environmental and cultural heritage assets to achieve best outcomes	<ul style="list-style-type: none"> Avoid urban growth impacts in areas with environmental and cultural heritage assets such as waterways, scenic landscapes, and Aboriginal cultural heritage and historic heritage places Support large-scale native vegetation corridor projects Protect significant inland and coastal landscapes, and cultural heritage assets
		Address impacts and opportunities from climate change	<ul style="list-style-type: none"> Monitor, assess and act on potential impacts of climate change Respond to opportunities for innovation and industry development arising from climate change and initiatives to reduce greenhouse gas emissions Support initiatives to undertake adaptation planning for climate change impacts in coastal areas and towns and implement through relevant changes to planning schemes
3. Develop sustainable communities through a settlement framework comprising major urban centres, which ensure residents have convenient access to jobs, services, infrastructure, and community facilities	<ul style="list-style-type: none"> Accommodating population growth and change Access to employment and services Growth pressures vary across region Sea change and commuter pressures close to Melbourne 	Sustainable growth and development through a network of settlements	<ul style="list-style-type: none"> Accommodate urban growth within Latrobe City as Gippsland's regional city, and in regional centres and sub-region networks of towns Land use strategies and structure plans to accommodate growth over the next 20 to 30 years Integrated infrastructure and services plans across the identified sub-regional networks A strategy for the long-term growth of Latrobe City as a single urban system Support new urban growth fronts in regional centres where natural risks can be avoided or managed Manage settlement growth to limit impact on agricultural productivity, natural and earth resources and ecological values
		Settlements that are strong, prosperous and sustainable	<ul style="list-style-type: none"> A housing strategy to investigate opportunities to achieve diverse and affordable housing Support heritage conservation and urban design initiatives to strengthen liveability and identity A strategy to increase demographic diversity and youth retention Plan for increased demand on services and infrastructure in towns with high holiday home ownership

Principles	Issues	Future directions	Strategies (see Map 17 for further direction)
4. Deliver timely and accessible infrastructure to meet regional needs for transport, utilities and community facilities	<ul style="list-style-type: none"> Maintaining infrastructure capacity with growing demand Robust rail and road framework High dependency on ports and airports outside the region 	Access to gas, electricity, drainage, water, sewerage and telecommunications	<ul style="list-style-type: none"> Strategic infrastructure plans to provide utility servicing infrastructure to growth areas, linked to development contribution plans
		Road, rail and port improvements	<ul style="list-style-type: none"> Improvements to the road, rail and public transport networks within and beyond Gippsland as population and economic growth increases Investigate opportunities for improved rail and road connections to the Port of Hastings and other freight and logistic precincts Support development of freight and logistics precincts in Morwell and Bairnsdale
		Health, education, cultural and sporting facilities to meet local needs	<ul style="list-style-type: none"> Regional social infrastructure in the regional city and regional centres

PART D | REGIONAL GROWTH PLAN

Map 17: Gippsland regional growth plan



Source: Department of Transport, Planning and Local Infrastructure

SETTLEMENTS



Promote growth

Proactively encourage and facilitate opportunities for major-scale development in areas identified for significant growth.

Support growth

Support proposals for medium-scale growth consistent with local plans.

Sustainable change

Support small-scale residential, commercial and industrial development and change.

*Plan Melbourne (Chapter 6 – State of Cities) identifies Warragul/Drouin, Wonthaggi and Leongatha as peri-urban towns with potential to attract housing and population growth out of Melbourne.

Regional city and centres

The regional city and centres will support increasingly diverse employment opportunities, including growth in healthcare, retail and professional and technical services.

Sub regional network

Strengthen sub-region networks of cities and towns through integrated planning and service delivery

*Latrobe City is the grouping of Trenarvon, Morwell, Moe and Churchill

CONNECTIVITY AND TRANSPORT



Networks supporting movement and access

Connections to the regional city and centres will be increasingly important to provide access to high level services and diverse employment opportunities. Efficient and reliable access to markets, including to ports, airports and interstate road networks, will be necessary to facilitate future agricultural, industrial and natural resource-based export opportunities.

Potential freight and logistics precincts

Potential freight and logistics precincts will enable consolidation of freight activities and opportunities to increase the use of rail. Road and rail between the Port of Hastings, Latrobe Valley and other interstate freight and logistics precincts will support future industrial and natural resource-based export opportunities.

ECONOMIC DEVELOPMENT



Key agriculture and forestry land

Protect key agriculture and forestry land and support food production for domestic and export markets.

Macalister Irrigation District

Protect the Macalister Irrigation District as a key asset for horticulture and dairy production.

Food manufacturing hubs

Food manufacturing hubs add value to local agricultural products.

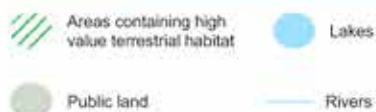
Brown coal reserves

Retain brown coal reserves for derivatives and future use in low-emissions power generation.

STRATEGIC TOURISM INVESTMENT AREAS



ENVIRONMENT



PART E | DELIVERING REGIONAL GROWTH

16. Implementation

16.1 Planning schemes

The Gippsland 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.

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

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 plan will guide and inform future strategic planning across the Gippsland 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.

This plan will provide councils 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 government planning authorities. Careful monitoring of urban projects, land development and population change during the life of the plan will be established to assist in its delivery.

PART E | DELIVERING REGIONAL GROWTH

16.2 Links to Regional Strategic Plan implementation

The plan is closely aligned with the strategic framework established by the Gippsland Regional Plan. Implementation of this plan will also be considered in relation to other ongoing work to implement the strategic directions of the Gippsland Regional Plan. This will strengthen the capacity for achieving shared objectives and targeting efforts to secure endorsement and funding for the highest priorities in the region.

Further, opportunities for implementation of key directions and actions expressed in this plan will be explored with the councils, state and federal governments, and the Gippsland Regional Development Australia Committee. It is appropriate to facilitate and ensure alignment between the regional growth plan and the regional plan in order to promote outcomes that are consistent with common directions expressed in each plan.

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 council planning schemes to align with the key elements of this plan, and providing a resource to guide and inform future strategic planning work across the region, including future reviews of each council's Municipal Strategic Statement.
- Developing a detailed implementation plan including strategy actions, timeframes and delivery responsibilities for action items. The implementation plan will also provide greater certainty on regional infrastructure investment priorities to inform future decision making about growth and change. Preparation of the Implementation Plan will involve working with councils, state government departments and infrastructure and service delivery agencies.
- Working with regional governance groups to coordinate their work plans and priorities to deliver the strategic directions of the plan. Currently these groups include the Gippsland Local Government Network and the Gippsland Regional Plan Leadership Group. The continued involvement of other organisations and bodies such as the Gippsland Coastal Board will also be important to realise the vision and aims of the plan.

There are a number of strategies and projects already identified by the region and some of these are underway or have committed funding in place. Supporting delivery of these projects, advocating for funding and leveraging across all levels of government will progress the region's identified priorities and help implement this plan.

Projects with current funding include:

- Port of Hastings – \$110 million funding is committed to continue planning and design work to expand the Port of Hastings as Victoria's second container port.
- Macalister Irrigation District – \$16 million in funding announced to provide upgrades aimed at improving efficiency and waterway health.
- Latrobe Valley Industry and Employment Roadmap – \$30 million has been committed for various initiatives to support transition and economic diversification.
- Warragul Rail Precinct Upgrade – \$26 million has been provided to improve pedestrian links, public transport access and car parking capacity at the station.
- Gippsland rail line investment – \$8 million has been provided for track technology east of Traralgon to improve safety and continuation of train services.
- CarbonNet – the project aims to capture carbon emissions from power plants, industrial processes and new coal-based industries in the Latrobe Valley for storage in geological basins. The federal and state governments have provided combined funding of \$100 million to support feasibility work.
- Gippsland Lakes Environment Strategy – aimed at improving the environmental health of the Gippsland Lakes and protecting this important asset for its environmental, recreational and economic value. Funding of \$10 million over four years has been committed for environmental projects.
- Princes Highway duplication (Traralgon to Sale) – \$175 million has been committed for the corridor upgrade to improve safety and reduce travel time for passengers and freight across the region.
- Road corridors – \$7 million has been committed to complete the sealing of the Omeo Highway.

While located outside Gippsland, there are potential benefits for the region stemming from the following projects that form part of the Victorian Government's submission to Infrastructure Australia:

- East West Link – this would improve freight movement from Gippsland to the Port of Melbourne and the M80 Ring Road.
- Dandenong Rail Capacity Program – this would facilitate improved rail capacity between Gippsland and metropolitan Melbourne.
- North East Link – this would provide for freight movement and improved access from Gippsland to major industrial areas and interstate road connections including the Hume Freeway.

PART E | DELIVERING REGIONAL GROWTH

16.4 Review and performance

It is intended that this plan will inform any subsequent review of the Gippsland Regional Plan.

The plan is intended to be a living and adaptable plan, able to respond to 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.

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

16.5 Implementation summary

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

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	Gippsland region councils
2. Implementation Plan	High	2014–2015	Gippsland region lead governance entity	Gippsland Regional Growth Plan project partners
3. Gippsland region Municipal Strategic Statement reviews	Medium	To coincide with Municipal Strategic Statement review cycles	Gippsland region councils	Department of Transport, Planning and Local Infrastructure
4. Review	Medium	2016–2018	Gippsland region lead governance entity	Gippsland Regional Growth Plan project partners

GLOSSARY

Aboriginal cultural heritage: means Aboriginal places, Aboriginal objects and Aboriginal human remains. They tell the story of Aboriginal use and occupation of the 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.

Advanced manufacturing: manufacture by automated and sophisticated processing.

Area of strategic significance (agriculture and forestry): land identified as prime productive agricultural land and/or land within an industry cluster.

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

Biofuels: liquid or gaseous fuels derived from biomass.

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

Commercial centre: 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 biophysical 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.

Existing urban area: existing residential, business or industrial development areas.

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.

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

Future investigation for urban growth: vacant or undeveloped land currently not zoned for urban development (farming or other non-urban zone).

Future urban growth (planned): vacant or undeveloped land currently not zoned for urban development. Subject to precinct structure plan or development plan preparation.

Future urban growth (zoned): vacant or undeveloped land currently zoned for urban development (residential, business or industrial zone).

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.

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

GLOSSARY

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.

Latrobe City: is the grouping of Traralgon, Moe, Morwell and Churchill.

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, flood and coastal storm surges.

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.

Primary production: growing, harvesting or extraction of primary (raw) products. Major industries in this sector include agriculture, fishing, aquaculture, forestry and all mining and quarrying industries.

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: represents Aboriginal people in the management and protection of Aboriginal cultural heritage.

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.

Strategic tourism investment areas: areas identified as having potential to rejuvenate, expand or develop tourism product of regional significance. These areas have been identified through an assessment of existing tourism strategies (national, statewide, regional and local) and criteria including proximity to existing tourism products and infrastructure, and proximity to national or state parks, coastal parks or ocean beaches linked to a touring route.

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.

Town centre: the area comprising the core commercial, civic and community functions of a town.

Transport corridor: a linear tract of land that contains lines of transportation such as highways or railway lines.

Water sensitive urban design: a planning and engineering design approach that integrates the urban water cycle – including stormwater, groundwater and wastewater management and water supply – into the design of urban areas to minimise environmental degradation and improve aesthetic and recreational appeal.

