

Regional Strengths and Infrastructure Gaps

Regional Analysis:
Victoria

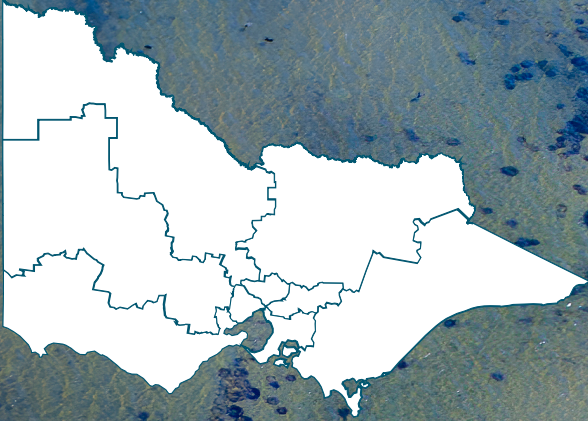


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6.7 Victoria



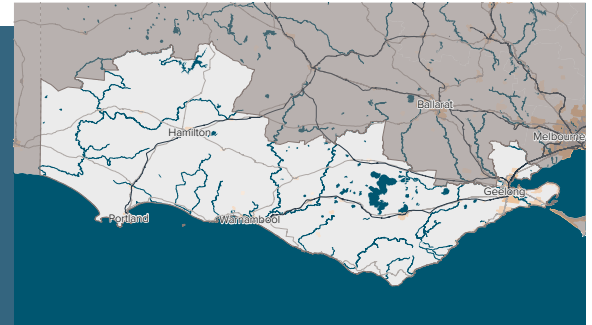
Tambo Bay, Gippsland Lakes, Victoria

6.7.1 Barwon South West

Stretching from the Great Ocean Road to the Southern Grampians, the Barwon South West region benefits from a diversity of offerings including its renewable energy capacity, research capabilities and natural assets with national parks and long stretches of coastline.

The region has seen rapid population growth in the last 20 years, especially in the areas of Geelong and Surf Coast. Agriculture has remained highly significant to the region as a major dairy producer, but the region's industries have diversified with a shift away from traditional heavy manufacturing to growth in health, education, professional services and advanced manufacturing. In recent years, climate change and a drier climate, coastal erosion and decline of water flows and quality have been of increasing concern to the region.

Looking ahead, the region hopes to grow sustainably by adopting circular economy practices and increasing renewable energy generation to electrify its industries and transportation. Industry growth supported by infrastructure, including high-quality digital connectivity to enable technological adoption and innovation, is a priority. In addition, the region hopes to address housing shortages to accommodate a growing population.



Twelve Apostles, Great Ocean Road, Victoria

Strengths

Key existing assets

Economic	Major attractions	The Great Ocean Road is one of the most visited stretches of coastline in the nation.
	Gateway ports	Avalon airport provides passenger connectivity to the region, whilst the Ports of Geelong and Portland provide freight capacity for the region and beyond. The Spirit of Tasmania vessels will operate from Geelong Port in Spring 2022.
Natural	Natural environments	Extensive coastline, including the Shipwreck Coast, as well as national parks, such as Great Otway, generate substantial tourism revenue.
Social	Cultural heritage	Budj Bim Cultural Landscape is the first Australian site to be recognised exclusively for its First Nations people cultural values on the UNESCO World Heritage List.
	Health infrastructure	Barwon Health is a significant healthcare provider and employer for the region. It has 22 sites providing comprehensive services. South West Healthcare provides more than 150 medical, nursing, mental health, allied health and community health services.

Key regional growth industries

Energy	Knowledge sector
<p>The Barwon South West region has a growing renewable energy sector derived from the combination of wind, solar and emerging bioenergy generation.¹ The region is home to the state's largest battery storage facility² and has been identified by the Australian Energy Market Operator (AEMO) as an optimal area for development of a Renewable Energy Zone (REZ).³</p>	<p>Regional tertiary education and research institutions such as Deakin University support growth in Barwon South West's knowledge sector.⁴ New research precincts such as the Hycel Technology Hub complement the region's endeavours in renewable energy production,⁵ while the Centre for Chemistry and Biotechnology develop biotechnology capabilities for the agriculture industry.⁶</p>
Agriculture, forestry and fishing	Tourism
<p>The region is one of Australia's largest dairy producing areas with 1,500 farms supplying around 23% of Australia's production.⁷ Its strong agriculture sector and food processing activities are a foundation for these industries.⁸ Given the growing knowledge sector, the region is well-placed to adopt new technologies and value-adding activities that can contribute to the diversification of its agricultural activities.⁹</p> <p>The Green Triangle Region spans the border between Victoria and South Australia and is a premier location for growing and processing wood fibre. The Green Triangle Region supplies \$1.5 billion in forest industry economic output and constitutes 17% of Australia's plantations, giving the region the potential to be the nation's timber powerhouse.¹⁰</p>	<p>The region's diverse range of environmental and heritage assets are major attractions underpinning the local tourism industry, with iconic destinations such as the Great Ocean Road, the Twelve Apostles, the Great Otway National Park and Budj Bim. In the Great South Coast area, investment in infrastructure is needed to support growth in tourism, including cultural heritage tourism, garden and landscape tourism, art galleries, eco-tourism and marine-based tourism.¹¹</p>

Infrastructure gaps



Sector: Telecommunications

Sub-sector: –

Infrastructure gap: Broadband and mobile connectivity

Barwon South West is home to the world-famous Great Ocean Road, which attracted over 2.8 million tourists between July 2018 and June 2019.¹² However, a number of digital connectivity issues across the region adversely impacts the region’s general liveability, economic and social development, with important implications for population attraction and retention.¹³

The Barwon South West region is also experiencing a fixed access broadband supply shortfall and inadequate mobile coverage for a majority of its regional towns.^{14,15} Lack of availability of adequate, affordable business-grade broadband services remains a concern highlighted by stakeholders especially with an increase in demand for digital connectivity during the COVID-19 pandemic.^{16,17}

Primary production industry (sheep and beef grazing, dairy grazing, horticulture, forestry and aquaculture) is the largest employer of the region.^{18,19} Low uptake of digital technologies and Internet-of-Things (IoT) applications in regional businesses presents opportunities for future productivity growth and competitiveness for industries in the Barwon South West region.²⁰

Key facts:

438
mobile coverage
black spots
registered by
regional users.²¹



Intermediate and major fixed
access broadband supply
shortfalls
continue to be identified in
the region.^{22,23}

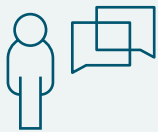


The region’s nine local
government areas averaged
a 2021 Australian Digital
Inclusion Index (ADII) score of
64.8,
below the
Victorian state
average of 72.²⁴



Impact:

- There is a lack of continuous, high quality mobile coverage along high visitation attractions. Seasonal tourism activity increases demands that strain existing infrastructure, raising potential safety issues.²⁵
- The availability of adequate, affordable business-grade broadband services remains a concern.^{26,27} A lack of access to adequate digital training limits opportunities for rural and regional students.²⁸
- The region has seen low uptake of IoT applications in agriculture and other important industry sectors. Lack of IoT knowledge and low uptake of IoT applications present unrealised potential for industry productivity growth and competitiveness.²⁹

**Consultation feedback:**

Stakeholders identified digital connectivity as poor. Access, quality, impacts to online services, business competitiveness and economic growth are areas of concern. It will be vital to transforming agribusiness, improving productivity and the efficiency of value-adding processes.

In addition, stakeholders identified digital connectivity as vital to supporting a growing number of people working from home, promoting access to online education and ensuring digital inclusion. Overall, stakeholders believe investment for better mobile coverage and business-grade broadband as essential to remaining economically competitive.



Sector: Social infrastructure

Sub-sector: Housing

Infrastructure gap: Availability, diversity and affordability of housing

The Barwon South West region is experiencing a shortfall of diverse, affordable and quality housing to accommodate its growing population. Housing prices have risen substantially, further driven by people moving to regional Victoria during the COVID-19 pandemic.³⁰

A mismatch between supply and demand has increased market competition for affordable properties. A lack of availability and diversity of housing has increased rental and mortgage stress for lower income households.³¹

There is a high demand for social housing accelerated by a lack of available and affordable housing in the private market. A growing number of households under rental or mortgage stress are seeking social housing assistance.³² Furthermore, increasing reports of domestic violence across the region strain social assistance services to provide affordable and adequate emergency housing.^{33,34}

In a submission to the Inquiry into Housing Affordability and Supply in Australia, RDA Barwon South West highlights a range of interacting factors contributing to housing affordability and supply challenges in the region, including rates of population growth, availability of labour and higher costs of transporting materials and equipment than in Melbourne. In addition, some areas of lower population growth are forecast to experience economic growth from new capital investments (such as renewable energy, large capital investments in road and water, expansion of manufacturing, agribusiness and tourism sectors), however these areas have not seen investment in housing to meet projected demand. The impact of housing shortages was highlighted as constraining workforce attraction, retention and economic growth.³⁵

Key facts:

Affordable housing for key workers is identified as a critical issue in RDA Barwon South West's 2021-2022 Business Plan.³⁶



Over
4,000
households registered for social housing (2019).³⁷

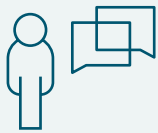


Just over
11,000
households in the region experiencing rental stress (2016).³⁸



Impact:

- An increase in family violence has contributed to an unprecedented demand for homelessness assistance and emergency housing.³⁹
- A mismatch between supply and demand has increased housing market competition for affordable properties. Lack of housing affordability induces housing stress in low-income households as disproportionate levels of income are spent on rent or mortgage payments.⁴⁰
- There are over 4,000 households waiting for social housing in Barwon South West.⁴¹ Lack of social housing availability and affordability increase risk of financial hardship and long-term impacts on health and wellbeing due to family violence and unemployment.⁴²
- Housing affordability is an issue throughout the region with particular examples in Corangamite Shire, Surf Coast Shire, Colac Otway Shire and Moyne Shire. This is affecting hospitality workers, farm workers, health and service sector workers and workers employed on the construction of wind farms.⁴³



Consultation feedback:

Stakeholders expressed that housing shortages, particularly social and affordable housing, is a challenge applicable to the entire region. This lack of affordable housing has meant the region has struggled to accommodate its workforce, with issues of social inclusion becoming apparent. The lack of housing affordability has further been exacerbated as sea and tree changers relocate to the region as a result of the COVID-19 pandemic.

In addition, stakeholders raised concerns over the current sustainability of the housing stock, which is not environmentally friendly or resilient against climate change. Stakeholders raised the importance of embedding water and energy sustainability principles for all housing developments and public spaces to help cut emissions. These principles will be particularly important when building additional affordable and social housing for the region.



Sector: Place and economic development

Sub-sector: —

Infrastructure gap: Industry-enabling infrastructure to support growth and innovation

Primary production industry is a significant employer in the Barwon South West region with the dairy industry accounting for half of the region's exports.⁴⁴ Industry growth has been challenged by climate change, skills shortages and a lack of workforce immigration domestically and internationally.⁴⁵ Digital connectivity, energy and water supply and storage capacity have been identified as key enabling infrastructure to allow industries to become more resilient, and improve the attractiveness of the region for investment.

Energy infrastructure upgrades can help farms and businesses improve productivity and access opportunities for investment and expansion, by reducing electricity supply outages, and enabling investment in modern farming equipment with higher energy demands.⁴⁶

Further, as demand for industry digitalisation and Internet-of-Things (IoT) applications increases, the infrastructure barriers to the uptake of Agricultural Technology (AgTech) need to be addressed.⁴⁷ Access to reliable and high-speed digital infrastructure in rural and remote areas is a constraint to the current and future productivity, and competitiveness of industries in the region.⁴⁸

A well-integrated transport network built to provide adequate capacity for future freight is vital to underpin primary industry growth by enhancing its cost-effectiveness and global competitiveness.⁴⁹ An improved transport network also has a key role to play in realising the tourism industry's growth potential.

Key facts:

The region produces
25%
of Australia's dairy
production.⁵⁰



Increase
IoT
demand is
anticipated over the
next 3-5 years.⁵¹

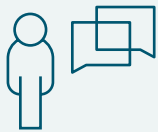


The Great Ocean Road attracts
more than six million visitors
each year, with expectations this
will rise to more than
8 million
in the next decade.⁵²



Impact:

- The dairy industry accounts for half of the region's exports. Lack of regional production diversity is prone to increase productivity risks brought about by climate change impacts such as reduced water security, increase heat stress on livestock, and changed distribution of pests and disease.⁵³
- The region lacks adequate and affordable business-grade internet services despite the introduction of National Broadband Network enterprise ethernet business service. There is a need to prioritise digital connectivity for underserved business precincts to enable industry growth and innovation.⁵⁴
- Retention of skills and upskilling of workforce will be important in securing key businesses in the Barwon South West region into the future, particularly with an economy shifting toward the service sector.⁵⁵



Consultation feedback:

During consultation, stakeholders identified transport infrastructure, improved water security and digital connectivity as enablers for industry growth and innovation. A lack of enabling infrastructure has been detrimental to industry productivity with stakeholders identifying the importance of improving efficiency and access to markets for economic growth.

Water security has also been a concern in enabling business development and attracting investment in the region as climate change has led to changing weather patterns, and reduced water quality and levels of surface and groundwater. To adapt, stakeholders identified the need to improve water security as well as digital connectivity to enable the adoption of technologies that could increase water efficiency. In addition, digital connectivity was identified as essential to ensuring businesses in the region remain competitive.

6.7.2 Gippsland

The Gippsland region possesses significant natural assets ranging from coastlines to mountains and extensive farmland enabling a thriving agricultural industry. Alongside being one of Victoria's major food producers and manufacturers, the region also offers globally significant resource deposits such as offshore gas, brown coal as well as opportunities in renewable energy production.

The region has experienced significant population growth, bringing greater diversity of people and a skilled workforce. Growth has led to greater pressure on road and transport assets, and more challenges in the delivery of sustainable social infrastructure. There are also concerns over climate change impacts as coastal erosion, droughts, bushfires and floods pose threats to future viability.

The region has also benefited from improvements to digital infrastructure, which has been vital during the COVID-19 pandemic. Digital infrastructure has enabled remote working, industry innovation and the heightened adoption of technology. However, issues with digital connectivity persist in parts of Gippsland, including East Gippsland.

Looking ahead, identified regional priorities include building climate resilience and enabling universal access to high speed digital connectivity to allow further growth for agribusiness and manufacturing. The region has also identified the importance of expanding freight rail infrastructure to maintain pace with industry growth, enable greater industry productivity and alleviate pressure on roads.



The Nobbies Walk, Phillip Island, Victoria

Strengths

Key existing assets

Economic	Water infrastructure	The Macalister Irrigation District is the largest irrigation area in Southern Vic with a total irrigation area of 33,500 ha. ⁵⁶
	Gateway ports	The Port of Hastings serves major international and domestic shipping movements that import and export oil, steel and general cargo.
	Defence assets	East Sale RAAF Base acts as a valuable defence training asset and significant employer.
	Energy infrastructure	An extensive electricity distribution infrastructure that connects to the existing generation facilities in Melbourne and broader Victoria supports the region's role as a major energy producer. This is supported by renewable energy with major wind energy production zones and solar farms.
Natural	Natural resources	Substantial brown coal reserves and offshore gas can be found in the region, as well naturally occurring hot water insulated under a coal layer in the LaTrobe Valley which offers an opportunity to develop the region's geothermal energy potential.
	Natural environments	National attractions include Gippsland Lakes, Phillip Island, Mt Baw Baw, and Wilsons Promontory National Park.
	Climate and topography	Gippsland benefits from wind resources and solar conditions that help to create opportunities for onshore and offshore wind generation and solar generation.
Social	Health infrastructure	The region has a significant network of healthcare facilities and services such as the Gippsland Southern Health Service, Central Gippsland Health Service, Gippsland Health Alliance and the Latrobe Health Innovation Zone.
	Educational and research institutions	The region brings together a number of higher education institutions that provide employment pathways across the region. These including TAFE Gippsland, Federation University Gippsland campus, Gippsland Tech School, Country University Centre Bass Coast and the Gippsland East Higher Education Study Hub in Bairnsdale.
	Community infrastructure	The region is host to a range of recreational, cultural and social infrastructure that supports local liveability, including the Gippsland Performing Arts Centre, Gippsland Regional Aquatics Centre, Gippsland Regional Indoor Sports Stadium and Ted Summerton Reserve.

Key regional growth industries

Agriculture, forestry and fishing	Manufacturing	Tourism	Energy
<p>Over one third of Gippsland's businesses are involved with agribusiness, with dairy production being the main contributor to the sector.⁵⁷ The development of the Ellinbank SmartFarm presents emerging opportunities in adopting innovative technology to add value and ensure the sustainability of the dairy industry.⁵⁸</p>	<p>The region's competitive advanced manufacturing sector supports the production of diverse goods including food, energy, pulp and paper, high-tech machinery and aircraft.⁵⁹ The Hi-Tech Precinct, home to the Morwell Innovation Centre supports collaboration between research, education business and industry.⁶⁰</p> <p>As the region's economic base has diversified, defence has emerged as an industry that has potential to drive the region's economic growth, and leverage the region's engineering and manufacturing capability for defence manufacturing. The region has many local engineering and educational organisations with transferrable skills to defence.⁶¹</p>	<p>The region's pristine coastlines and unique inland environments, present significant opportunities to attract more nature-based and cultural tourism activity.⁶² Agritourism also has the potential to grow as it builds upon Gippsland's strong primary production sector.⁶³</p>	<p>Progressive transition of the region's electricity sources to renewable and clean technologies is supported by the region's high-capacity electricity transmission infrastructure. A number of projects under development, including CarbonNet, Star of the South and the Hydrogen Energy Supply Chain pilot project are expected to further enable the region's participation in global energy opportunities.⁶⁴</p>

Infrastructure gaps



Sector: Telecommunications

Sub-sector: –

Infrastructure gap: Broadband and mobile connectivity

While many towns within Gippsland are 5G enabled, the region has mid-ranked digital inclusion scores as compared to the rest of Victoria and there are over 400 black spots across the region.^{65,66} Improved digital access, including skills training to improve digital literacy and improved business-grade internet connections, would enable growth across industry, including in high-value sectors such as agribusiness and advanced manufacturing.⁶⁷

Lack of reliable and affordable business-grade broadband and local skills shortages also increase the incidence rates of system faults and average repair response times.⁶⁸ The impacts of these shortfalls have been acutely felt during the COVID-19 pandemic where Gippsland saw a significant increase in demand for digital connectivity by households and businesses as people worked from home and migrated to the region in greater numbers.⁶⁹

Key facts:

496
mobile coverage
black spots
registered by
users.⁷⁰



Local governments in the
Gippsland region scored an
average of

64.2

on the Australian
Digital Inclusion
Index, compared to the state
average of 72 in 2021.⁷¹

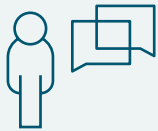


The Gippsland Regional
Digital Plan identified
fixed access broadband
supply shortfalls
for many towns and
localities in the region.⁷²



Impact:

- Inadequate mobile coverage has implications for public safety, economic development and general liveability.⁷³
- Fixed access broadband services in many areas are unable to meet the needs of businesses involved in primary production. Tourism locations in the region have also identified issues in accessing fixed broadband services.⁷⁴
- Mobile coverage challenges exist in remote primary production locations. National parks and trails are underserved, which impacts economic development.⁷⁵



Consultation feedback:

During consultation, stakeholders noted that the region has seen improvements to digital connectivity over the years. However, this connectivity has been focused on major centres while regions like East Gippsland were noted as suffering particular challenges. Stakeholders also noted the increased demand on telecommunication networks created by seasonal visitation and migration to popular tourism areas alongside population growth, particularly in coastal communities. Due to increasing demand and the COVID-19 pandemic, which highlighted the importance of digital access for remaining connected, working remotely, accessing digital services and engaging in the digital economy, digital connectivity is a high priority. Digital connectivity was also seen as being vital in enabling future industry growth to enable greater productivity and efficiency.



Sector:	Transport
Sub-sector:	Freight
Infrastructure gap:	Capacity, connectivity and quality of freight infrastructure

Gippsland’s freight infrastructure has not been able to maintain pace with industry development in recent decades. A lack of reliable, cost-effective freight networks constrains the future growth prospects of Gippsland’s primary and secondary industry, which include the highest-volume regional exporters in the Gippsland region. The expansion of the national freight task over the coming decade is expected to place additional strain on Gippsland road network.^{76,77} There is also limited rail capacity to provide for forecast transport requirements to the Port of Hastings in the medium and longer term,⁷⁸ and road capacity surrounding the port to support higher trade volumes.⁷⁹

A growing freight task and increasing size of heavy vehicles has also increased pressure on the region’s local road infrastructure. Heavy vehicle traffic has increased local government road infrastructure maintenance. Importantly, much of the region’s local road network is not designed to support larger freight traffic.⁸⁰

Key facts:

Gippsland produces over
\$2 billion
worth of agricultural output
per year.⁸¹



31%
of rail services on the
Gippsland line did
not arrive on time in
March 2018.⁸²

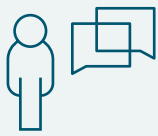


Gippsland is responsible for
31%
of Vic’s dairy production
by volume and 25% of Vic’s
beef production by value.⁸³



Impact:

- Reliable, cost-effective freight networks are needed to support future growth across Gippsland's agriculture, fishing, forestry, manufacturing, mining and energy industries. Freight network inefficiencies are constraining the growth potential of Gippsland producers.⁸⁴
- Industry sees the potential benefit in using rail freight, however current reliability and cost of the service is not adequate.⁸⁵ Ageing infrastructure and lack of maintenance has increased the risk of potential line closures or train derailment.⁸⁶
- The growing freight task and increasing size of heavy vehicles is increasing pressure on the region's road infrastructure, including the local road network that is not always maintained to levels needed to support large freight vehicles.⁸⁷



Consultation feedback:

Stakeholders expressed the view that population and industry growth has significantly increased pressure on roads. Although the region's road network has seen significant improvement over the past decades, there remains opportunity for further upgrades as industry growth has outpaced road capacity. Stakeholders also expressed concerns for the decreasing investments for rail that could greatly benefit the region by alleviating pressure on roads.

Stakeholders believe current freight infrastructure can be improved by upgrading rural roads and investing in rail infrastructure. Increasing rural road's last mile connections to support heavy vehicles' access to the point of production and growth is crucial. This will increase safety, productivity and efficiency. Rail was also seen as a good investment as it reduces emissions and can help increase efficiency by taking heavy vehicles off roads to ease local congestion.



Sector: Resilient and sustainable infrastructure

Sub-sector:

Infrastructure gap: Natural disaster resilience

With average temperatures in the Gippsland region set to increase by between 0.71-1.20 °C by 2030, the potential risk of extreme weather events in the region is set to increase.⁸⁸ Lack of climate and natural disaster resilient infrastructure increases risks of damage during extreme weather events, augments maintenance costs, places communities' lives and livelihoods in danger, hinders economic recovery efforts and disrupts critical services in the Gippsland region.⁸⁹

The increasing impacts and interconnectedness of all-hazards, including climate change, are likely to lead to more frequent and severe shocks and stresses. In recent years, the region has been severely affected by a number of natural disasters, including the 2019-2020 Black Summer bushfires and major flooding in mid-2021.^{90,91} Both natural disaster events saw a huge economic impact to the region's production especially with the dairy and forestry industry.⁹² Loss of homes and businesses, and damage to critical infrastructure has crippled region's recovery effort, bringing about additional challenges to future liveability and productivity in the Gippsland region.⁹³

Key facts:

78%

of the Gippsland coast is subject to coastal erosion.⁹⁴



Gippsland supplies

60%

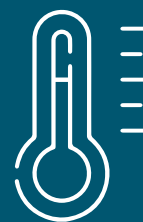
of Melbourne's drinking water.⁹⁵



Average temperature across the Gippsland is forecast to increase by

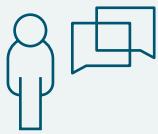
0.71-1.20 °C

by 2030.⁹⁶



Impact:

- Primary industry in Gippsland is highly sensitive to reduced water supply and increased temperatures. Increased incidents of bushfire and flooding combined with a lack of regional product diversity will affect Gippsland's industry and economic output.^{97,98}
- Climate change is likely to increase flooding and drought. This will place pressure on water supply infrastructure, reduce water quality, and impact on ground water reserves - particularly in shallow aquifers.⁹⁹
- Infrastructure situated on the coast and at the urban-bush interface is vulnerable to tidal inundation, coastal and estuarine inundation, coastal erosion, shoreline recession and sea level rise, as well as bush fire risk. Lack of climate resilient infrastructure risks increased flood damage, maintenance costs and disruption to critical services in the region.¹⁰⁰



Consultation feedback:

Climate change and its impacts were raised by stakeholders during consultation as a challenge which is expected to intensify over the next few decades. Bushfires, floods, droughts and coastal erosion have already started to affect the region, challenging the sustainability of communities and infrastructure. Stakeholders highlighted the impacts of these natural disasters, such as storms and coastal erosion on communities in South Gippsland, Wellington and Bass Coast.

Stakeholders identified the importance of community and strategic planning against future climate impacts and natural disasters. Proactive planning was identified as essential to mitigating the impact of all-hazards and climate change. Infrastructure resilience must also be considered as a priority to secure the resilience of communities in the event of future shocks and stresses.

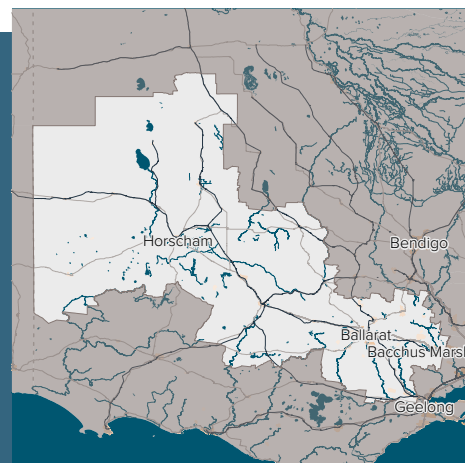
6.7.3 Grampians

Stretching from the western edge of the Melbourne metropolitan area to the South Australian border, the Grampians region is home to diverse mountain ranges, lakes, rivers and productive agricultural land. The region has strong agricultural and manufacturing industry foundations, in addition to tourism, health and emerging renewable energy sectors.

Over the past few decades, although population has grown and brought greater demand for road and public transport infrastructure, more remote communities are poorly serviced by public transport.

The region has also suffered from skills shortages. Businesses struggle to attract and retain skilled workers due in part to a lack of social and community infrastructure investment to enable a high quality of life. Further, housing shortage and affordability issues has meant an inability to house workers needed to support existing industry and future growth.

Looking ahead, the region sees opportunities to improve quality of life for its communities and improve health and wellbeing outcomes through the provision of more affordable and quality housing, public transport to improve connectivity in addition to high quality social infrastructure and services. This will also help to alleviate skills shortages for industry growth. Future growth in renewable energy is also a priority that will require improved transmission infrastructure for energy distribution.



Strengths

Key existing assets

Economic	Water infrastructure	The Murray Darling Basin and the Wimmera-Mallee Pipeline Project enhance water security and liveability.
	Strategic location	The region is well-placed between Adelaide and Melbourne, enabling efficient access to both markets for the region's primary producers.
	Energy infrastructure	The Grampians is a green power hub, with solar and wind farms throughout the region.
Natural	Natural environments	The region is home to Grampians National Park, Mt Arapiles and the Little Desert National Park.
	Natural resources	The region has substantial gold, copper, coal, mineral sands and timber reserves.
Social	Education and research institutions	Multiple universities have campuses and research collaborations in the region.

Key regional growth industries

Agriculture, forestry and fishing	Energy	Tourism
<p>The Grampians region is characterised by a strong agricultural sector, mainly driven by activities in broadacre cropping and wheat production.¹⁰¹ Regional research and development, such as the Horsham Grains Innovation Park,¹⁰² have allowed the region to incorporate technology and innovation to create more productive and sustainable crops.¹⁰³</p>	<p>Major wind energy production zones have already been established in the region, such as the Bulgana Green Power Hub, which is set to supply around 750,000MWh of energy annually to the National Energy Market.¹⁰⁴ The Grampian's region is well-placed to continue expanding this sector, supported by continual investment in local energy projects.¹⁰⁵</p>	<p>The tourism sector is a growing industry with many visitors attracted to the Grampian National Park, regional food and wine experiences and heritage tourism activities.¹⁰⁶ In 2019, there were over 1.1 million domestic overnight visitors.¹⁰⁷ Significant opportunities exist in marketing the region's strengths for wine production to appeal to tourists.¹⁰⁸</p>



Ballarat Town Hall, Ballarat, Victoria

Infrastructure gaps



Sector: Transport

Sub-sector: Public transport

Infrastructure gap: Capacity, connectivity and quality of public transport

The Grampians region has been facing growing demands for efficient, reliable and accessible public transport infrastructure in recent years. In the Central Highlands area, where residents are highly car-dependent, less than half of the region's residents live within ready access of public transport with poor public transport being a barrier to participation and services.¹⁰⁹ Across the Wimmera Southern Mallee there is also a lack of regular services between smaller towns and regional hubs. The public transport catchment in the main regional hub of Horsham is very limited.^{110,111}

Car dependence exacerbates challenges created by an ageing population living in towns with limited access to public health services. A large number of young people also need access to education infrastructure, including regional TAFEs.^{112,113} Limited options to access critical public services affects liveability and can re-enforce disadvantage and social isolation in regional communities. Lack of public transport infrastructure can limit economic growth in the region's smaller towns and the ability of businesses in these communities to attract workers.¹¹⁴

Key facts:

Less than

1%

of people travel to work by public transport in the Wimmera Southern Mallee area.¹¹⁵



The region covers a large geographic area, with rural and remote communities spread across

48,000

square kilometres.¹¹⁶



Only

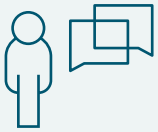
1.7%

of tourists visiting the region use public transport.¹¹⁷



Impact:

- A majority of the Grampians region is not serviced by passenger rail and limited regional coach services are available.¹¹⁸ This increases the dependence on car ownership to access critical services within the region.
- In the regional hub of Horsham, 55% of residents live within ready access of public transport compared to the Victorian average of 74%.¹¹⁹
- Improved transport connectivity and frequency of public transport services is required for rural and remote communities to access local health and education services. Limited connectivity to these services affects liveability, re-enforces disadvantage, and social isolation and inhibits economic growth.¹²⁰



Consultation feedback:

During consultation, stakeholders identified the need for better public transport infrastructure to promote liveability and access to services within the region. In particular, it was identified that remote communities are highly underserved by public transport, especially following the dismantling of passenger rail services almost three decades ago. A lack of public transport has inhibited the growth of remote communities who struggle to access essential services such as healthcare, aged care and childcare.

Stakeholders believe better public transport between service centres and surrounding rural communities will aide in creating a network of connected communities for enhanced amenity and accessibility. Public transport connectivity is also expected to contribute to promoting liveability, which is an important component towards attracting and retaining skilled workers.



Sector: Social infrastructure

Sub-sector: Housing

Infrastructure gap: Availability, diversity and affordability of housing

The Grampians region is experiencing a shortfall of diverse, affordable and quality housing to accommodate its population. Housing prices in the region have risen substantially, further driven by an influx of demand from remote workers moving to regional Victoria during the COVID-19 pandemic.¹²¹

A mismatch between population demand and diversity of housing supply has led to limited options for affordable housing in the region.¹²² This lack of housing availability and accommodation is also limiting the region’s ability to attract and retain necessary labour to support the local economy and improve regional liveability.

In addition, a lack of affordable and social housing is increasing demand for low-rent housing in the private market, which is in short supply. Short-term and transitional housing have also seen substantial growth in demand, in part due to rising domestic violence and unemployment.¹²³

Key facts:

6,332

low income households with rental stress (2016).¹²⁴



74.53%

of residents own their own homes (2016).¹²⁵



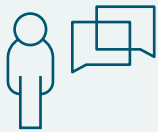
43%

rise in requests for long-term housing assistance in the Central Highlands (2015–17).¹²⁶



Impact:

- A lack of housing affordability can induce housing stress as low-income households spend an increasing proportion of their income on rent or mortgage payments.¹²⁷
- A mismatch between supply and demand has increased housing market competition for affordable properties. Lack of housing diversity and availability of short-term and transitional housing creates 'bottlenecks' for social housing demand.¹²⁸
- Lack of social housing availability increase risk of financial hardship and long-term impacts on health and wellbeing.¹²⁹

**Consultation feedback:**

During consultation, stakeholders identified growing difficulties with finding affordable and quality housing within region. This has been particularly detrimental as housing and accommodation shortages decrease the attractiveness of jobs within the region, contribute to an inability to house workers and greater socio-economic inequality.

This issue has been further intensified by the COVID-19 pandemic where previously affordable housing options in the region have become increasingly limited. To enable future growth, stakeholders identified the importance of delivering sufficient housing and accommodation to meet demand. If this issue is left unaddressed and adequate social and affordable housing is not provided, the problem is only expected to worsen and further contribute to negative social outcomes across the region.



Sector: Energy

Sub-sector: Electricity and gas

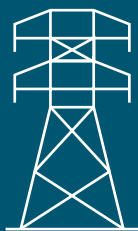
Infrastructure gap: Distribution, transmission and generation of energy

The Grampians region's large land mass is an asset that makes it an ideal region to harness renewable energy opportunities.¹³⁰ Victoria's net zero policy objective has led to increased construction of wind turbine and solar energy assets in the region.¹³¹ This has increased the skills and capacity of the local infrastructure sector to deliver renewable energy projects, a strength which can be leveraged to build more renewable energy supply in the region in coming years.

While renewable energy is an emerging opportunity for the region, future development will require investment in transmission infrastructure. Augmented local transmission infrastructure can help the region reap the benefits associated with wind and solar energy generation, which includes development and expansion of energy-intensive meat, grain and horticulture processing sectors.^{132,133}

Key facts:

The region's Roadmap to Net Zero Emissions notes that local action, in addition to working with governments, industries, and agencies outside the Grampians, can bring the region's emissions down to net zero by **2044.**¹³⁴



Victorian Renewable Energy Target is for **50%** renewable energy by 2030.¹³⁵



The region has almost **\$5 billion** worth of wind and solar projects in planning or under construction.¹³⁶



Impact:

- Decentralised power generation technology for low scale energy distribution will increase community, asset and network resilience.¹³⁷
- The Grampians region covers 49,000 square kilometres or 21% of the land mass of Victoria. This large land mass, which has high potential for solar and wind energy generation, makes the region an ideal location to seize more renewable energy opportunities.¹³⁸

**Consultation feedback:**

During consultation, stakeholders identified a growing focus on sustainability and resilience. Climate change has caused more frequent and intense extreme events, a drier climate, coastal erosion and a decline in water quality. Disadvantaged and vulnerable people have been the most disproportionately affected. As a result, the region is looking to mitigate these effects and has recognised the importance of sustainability, resilience and a net zero emissions future. A transition to renewables has therefore become a priority for the region.

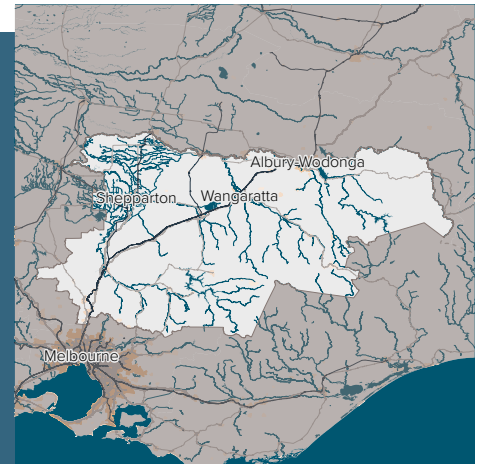
Stakeholders identified that increasing renewable generation in the region will require upgrades to current transmission and distribution infrastructure. The expected benefits include the ability to reduce emissions, electrify their region, and support the production of green hydrogen. Stakeholders also expected upgrades to transmission and distribution infrastructure to help improve the reliability of their energy supply and help decrease the cost of energy for the region.

6.7.4 Hume

Sharing its northern border with New South Wales and its southern border with the Melbourne metropolitan region, the Hume region holds a key strategic position in connecting the nation's most populous states. Its landscapes range from the Snowy Mountains to the Murray and Goulburn Rivers, with vast agricultural lands and multiple major centres.

The region has seen extensive population growth over the last decade, which has recently been accelerated by the rise of remote working as metropolitan residents relocate to the region. The COVID-19 pandemic caused an increased reliance on digital connectivity with greater demands for reliable and high-speed connections. From a transport perspective, population growth coupled with tourism growth has meant extra pressures on the road network.

Looking ahead, the region is hoping to improve their public transport network to alleviate pressure on local road assets in addition to providing better connectivity for residents. There is recognition that network coverage and broadband speed reliability is crucial to supporting future economic and population growth. Further, the region is looking to address housing shortages that have arisen due to the increased migration from metropolitan regions and demand for seasonal and visitor accommodation.



Horn Lookout, Mount Buffalo National Park, Victoria

Strengths

Key existing assets

Economic	Major attractions	The region is home to alpine resorts including Falls Creek, Mount Hotham, Mount Buller and Mount Stirling, providing nature-based tourism such as skiing, snowboarding, mountain biking and bushwalking.
	Transport infrastructure	Key road and rail connections underpin the region's advantage as a transport and logistics hub, with road infrastructure such as the Hume Freeway, Midland Freeway and Maroondah Highway providing intra and inter-state freight and passenger movements. The region also has rail links to Melbourne and Sydney.
	Water infrastructure	The Goulburn Murray Irrigation District draws water from the region's numerous water assets to support a thriving agricultural industry.
	Energy infrastructure	The region's transmissions infrastructure, including high voltage transmission lines and electrical terminal stations support local renewables growth and has capacity for future expansion.
Natural	Natural environments	The region benefits from access to significant water assets, including the Goulbourn, Broken, Murray, Campaspe and Ovens River and Lake Eildon. Natural assets such as the Strathbogie Ranges and Cathedral Ranges, and a number of national, state and regional parks support the region's nature-based tourism sector.
	Climate and topography	There is fertile soil and water access in parts of the region, such as Goulburn, where much of the land is used for primary production, supports horticulture, dairy, cropping, and livestock grazing.
Social	Education and research institutions	The region is home to La Trobe University, Charles Sturt University and University of Melbourne campuses as well as TAFE institutions such as Goulburn Ovens Institute of TAFE.

Key regional growth industries

Agriculture, forestry and fishing	Transport	Tourism
<p>Agriculture is a major contributor to Hume’s economy, contributing 24% of the region’s total export value.¹³⁹ The industry is well-placed to meet overseas demand for high-quality food and beverage products, which would benefit from further adoption of value-adding processing activities.¹⁴⁰</p>	<p>Hume’s strategic location between Sydney and Melbourne creates significant opportunities for freight activity along existing major transport corridors. Establishment of transport and logistics hubs such as Logic in Wodonga and Goulburn Valley Link, is expected to significantly benefit the regional economy.¹⁴¹</p>	<p>Natural landscapes, cultural and heritage attractions, alpine resorts and abundance of outdoor recreational activities make the Hume region an attractive tourism destination.¹⁴² Hume can benefit from additional agritourism and regional food and wine offerings, to support, diversify and grow output derived from the local primary production industries.¹⁴³</p>

Infrastructure gaps



Sector: Telecommunications

Sub-sector: –

Infrastructure gap: Broadband and mobile connectivity

Digital connectivity in the Hume region is affected by environmental and socio-economic factors such as the varied topography, substantial range in prosperity in family households and an increase of older residents.¹⁴⁴

In 2021, local governments across the Hume region scored an average Australian Digital Inclusion Index (ADII) score of 65, lower than the state average of 72.¹⁴⁵ The score is weighed based on an area’s access, affordability and ability to provide digital connectivity services. With the emergence of the COVID-19 pandemic in 2020 and beyond, the ability to connect to the internet for low-income family households has been particularly challenging as access to critical social infrastructure such as schools and libraries has been limited.¹⁴⁶

Lack of available and affordable internet connections constrains the productivity of local industries, such as the tourism sector where lack of digital access affects visitor experience and business innovation. A shortfall in local digital skills and awareness also limits access to educational, social and workforce opportunities, and exacerbates economic and social exclusion.¹⁴⁷

Key facts:

The average ADII score of local governments areas in the Hume region was

65,

with scores ranging from 61 to 70 across the region (2021).¹⁴⁸

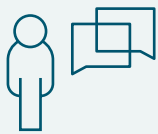


Submissions to the 2021 Regional Telecommunications Review from Strathbogie Shire Council¹⁴⁹ and RDA Hume¹⁵⁰ provides lived experience of the of the digital connectivity challenges experienced in the region.



Impact:

- From 2013 to 2017, there was a 16% increase in the number of Hume region residents with low income cards.¹⁵¹ In 2017, 5,723 residents were recipients of government low income cards, including 3,403 living in Goulburn and 2,320 living in Ovens Murray.¹⁵² Those on lower incomes face greater challenges in accessing digital technology and high-quality telecommunications infrastructure.
- Fibre optic cables, which run across the Hume region, are underutilised and present an opportunity to be made more accessible.¹⁵³
- The population is expected to increase by approximately 97,750 people by 2036.¹⁵⁴ This expected growth puts pressure on the availability and continuous improvement of the digital network to meet future demand.



Consultation feedback:

Stakeholders identified that the region has experienced an increased reliance on digital connectivity, especially through the COVID-19 pandemic. The COVID-19 pandemic exposed the importance of digital literacy and access to reliable connectivity as it impacts residents and their ability to access services, and participate socially during periods of isolation and lockdown.

Improving digital connectivity was raised as a key priority for the region that would assist in addressing digital inclusion issues as well as improving liveability and access to services. Flow-on benefits of this were also raised which included business growth and innovation enabled by the adoption of new technologies in addition to the ability to attract and retain workers.



Sector: Social infrastructure

Sub-sector: Housing

Infrastructure gap: Availability, diversity and affordability of housing

The Hume region is home to sensitive environmental land, which restricts growth opportunities and investment in potentially high yielding rural areas.¹⁵⁵ According to the Hume Regional Growth Plan, to meet the expected population growth in 2041, 53,000 new dwellings would be required. Restrictions in land use are an additional challenge in aligning supply with demand through effective integrated strategic planning. Areas that are expecting the greatest demand in additional dwellings are in the municipalities of Greater Shepparton, Wodonga, Mitchell and Moira.¹⁵⁶

Unemployment and a lack of housing affordability has seen increased demand for short-term emergency and transitional housing in the Hume region. Insufficient social housing has put increasing pressure on existing social housing services in the region. Across parts of the region, 485 households were provided with crisis accommodation between March and September 2020, during the COVID-19 period.¹⁵⁷

Key facts:

7,184

low-income households in the region with rental stress (2016).¹⁵⁸



Population growth of

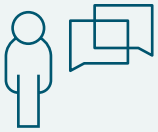
17.3%

from 2010–2017 for the region.¹⁵⁹



Impact:

- The increasing cost of renting will increasingly exclude low-income earners from the private housing market, placing greater strain on an undersupplied public housing system.¹⁶⁰
- Across the Ovens Murray sub-region, approximately one in three rental households experience rental stress and less than 50% of new rentals are considered affordable.¹⁶¹
- One in five low-income households in Goulburn sub-region experience financial stress from mortgage or rent.¹⁶²



Consultation feedback:

Stakeholders noted that population and tourism growth have increased demand for short-term housing accommodation. This has also caused housing shortages for the region, in addition to putting upwards pressure on housing prices. Stakeholders believe this challenge will worsen as more metropolitan residents relocate to the region. Stakeholders also emphasised the need to provide more social and affordable housing, as well as other accommodation types, for continued growth. Data provided by the Hume RDA shows that median rent in the region has risen 52% in the past decade, accelerating since 2018. Increased demand for regional housing, triggered by COVID-19 has also exacerbated shortages in the rental market across parts of the region.

Although social and affordable housing was identified as an opportunity in addressing housing availability and affordability issues, stakeholders also pointed out that it will be vital to ensure new housing is of a high quality and located with good connectivity to essential services. Enabling infrastructure was noted as a crucial component of unlocking additional housing development. These factors will be essential to ensuring communities remain connected, inclusive and liveable.



Sector: Transport

Sub-sector: Public transport

Infrastructure gap: Capacity, connectivity and quality of public transport

The Hume Region has two major rail service lines, however services on these lines are not easily accessible to many rural or remote communities. Limitations in public transport services from sub-regions of Hume to major cities and regional centres can hinder opportunities for growth and investment in the region.¹⁶³ It can also limit residents' ability to access services and facilities in the wider region.¹⁶⁴

In addition, the frequency of services running from Shepparton to Melbourne are not comparative to that of other regional cities and could be limiting business growth and access to education and services.¹⁶⁵ With Shepparton as the pre-eminent centre for population growth within the Goulburn Valley sub-region, the growing demand for better public transport services needs to be addressed.

With the proportion of the population over 65 projected to increase 34.8% by 2031, low level of public transport access to health services, commercial centres, community facilities and entertainment presents a significant challenge for increasingly dependent populations, particularly in smaller rural settlements. Improved public transport access in the region could play a key role in reducing car dependency and increasing accessibility for an ageing population.¹⁶⁶

Key facts:

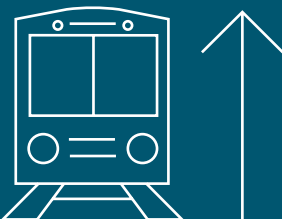
47.4%

growth in public transport journey to work between 2006–2016.¹⁶⁷



10.4%

increase in rail patronage (2011–12 to 2016–17).¹⁶⁸



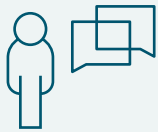
34.8%

of region's population will be 55 years or over by 2031.¹⁶⁹



Impact:

- Visitor numbers to the Hume Region exceeded 7.6 million people in 2019.¹⁷⁰ This demand requires continual improvement in the quality and capacity of the public transport system to improve mobility within the region.¹⁷¹
- For areas outside of the major rail corridors, users must rely on infrequent and poorly connected bus services.¹⁷² This increases travel time and reduces comfort, making modal shift less desirable.
- The competitiveness of the region in attracting investment and new residents is negatively affected by a lack of public transport options both within the region and to other major centres such as Melbourne.¹⁷³



Consultation feedback:

Stakeholders raised transport as both a key challenge and opportunity for the region. Although trends such as tourism and population growth have increased congestion on roads, there is an opportunity to alleviate this issue through the provision of more public transport services. Stakeholders identified that this applies to both intra and inter-regional connectivity, such as the need to improve the limited access to Melbourne and other east-west regions.

Better public transport is expected by stakeholders to improve labour force mobility and reducing pressure on metropolitan assets. In addition, stakeholders speculated that current public transport infrastructure could benefit in future from technological improvements such as autonomous vehicles and high-speed rail.

6.7.5 Loddon Mallee

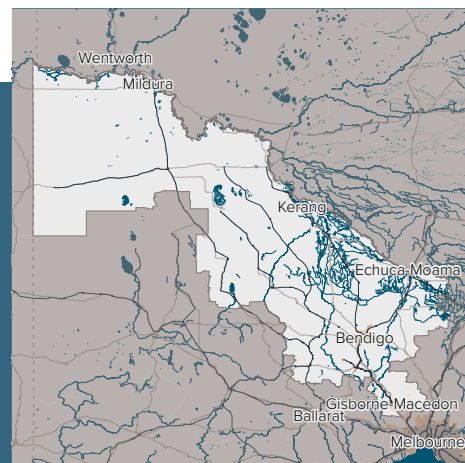
The Loddon Mallee region stretches from the outskirts of Melbourne through to the north western corner of Victoria.

The region is underpinned by a strong agricultural and food manufacturing base. In the north, adjacent to the Murray River there has been strong growth in irrigated agriculture, particularly horticulture, the development of utility scale solar farms and mineral sand deposits. Southern parts of the region are home to a growing artisanal food and wine industry and a growing gold mining industry. The transport corridor between Melbourne and Bendigo is also home to a strong creative community.

The region has experienced significant population growth in recent years which has not been evenly distributed. Many towns have flourished with an influx of tree changers and internal migration from smaller towns. This has led to greater community expectations around the quality of services especially in Bendigo and Mildura. The region's agricultural industry has also grown, supported by the Sunraysia irrigation area, however climate impacts have become a cause for concern.

Looking forward, the region is looking to drive greater competitive advantage for local industry through improvements to digital connectivity. This is expected to support a range of sectors, from the cultural and knowledge-based sectors to the agricultural sector, which has the ability to transform current practices with the adoption of robotics and internet of things. There are also hopes of addressing skills shortages in the region with a recognition that this will require further investment for local tertiary and skills training institutions. Road and rail infrastructure is also a priority as freight and passenger productivity is being hindered by congestion issues.

Stakeholders also highlighted the significance of cross-border challenges when addressing infrastructure needs and services, due to community movement, in addition to opportunities to collaborate across borders to achieve outcomes.



Strengths

Key existing assets

Economic	Gateway ports	The region is supported by a network of regional airports and is home to Mildura Airport, the busiest regional airport in the state. ¹⁷⁴
	Water infrastructure	Extensive irrigation systems, support the region's dairy, horticultural and agricultural sectors.
Natural	Natural resources	The region is home to gold, zircon, rutile, titanium and other mineral sand deposits.
	Natural environments	The region benefits from the Murray, Avoca, Loddon, Campaspe, Goulburn rivers, and various natural assets such as Hanging Rock and Lake Tyrell which drive the region's nature-based tourism.
Social	Health infrastructure	Major hospitals in Mildura and Bendigo are supported by regional facilities such as Echuca Regional Hospital.
	Education and research institutions	Multiple universities have a presence in the region, including La Trobe University as well as a number of vocational training institutions.
	Cultural heritage	The region has rich Aboriginal and gold-mining cultural heritage. Bendigo has been designated a UNESCO Creative City of Gastronomy in recognition of its food and drink offerings and the region's agricultural, hospitality and food culture.

Key regional growth industries

Agriculture, forestry and fishing	Tourism	Energy
There are significant growth opportunities in the \$3.8 billion food production sector, driven by new technologies which improve productivity and value. ¹⁷⁵ The Mallee Regional Innovation Centre seeks to find innovative solutions to agricultural processes and irrigation, with the potential to bring \$19.7 million in benefits annually. ¹⁷⁶	Growth in the local tourism industry has immense potential, particularly due to the region's proximity to Melbourne, Sydney and Adelaide via regular daily passenger flights from Mildura and Bendigo. In addition to the region's natural environments and cultural tourism offerings, London Mallee also holds multiple festivals and events which act as a tourism drawcard by attracting visitors to the region. ¹⁷⁷	Renewable energy generation is seen as a major growth industry which could generate 3,200 jobs during construction phases. ¹⁷⁸ The region is home to most of Victoria's large-scale solar generation, though investment in transmission and distribution networks will be needed to further unlock the region's potential for producing renewable energy. Biomass production presents potential growth opportunities where it leverages the region's strong agricultural sector to convert waste to energy. ¹⁷⁹

Infrastructure gaps



Sector: Social infrastructure

Sub-sector: Education

Infrastructure gap: Access to further education and skills training

The Loddon Mallee region is currently experiencing skills shortages across many industries with a lack of professionals including engineers, teachers, health professionals and tradespeople.¹⁸⁰ In particular, the food industry of the Loddon Campaspe area, which contributes \$950 million to domestic imports, has a strong demand for a skilled and stable workforce.¹⁸¹ The same is true for employers in the agricultural sector who are finding it difficult to build a pipeline of local skilled workers amongst a declining working population.¹¹⁷

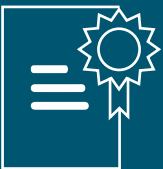
A clear need has been identified to support the enhancement of existing, and deliver new, further education and skills training infrastructure that aligns to current industry needs. In addition, there is scope to facilitate greater collaboration between industry and training and education providers to provide clear pathways into local employment.¹⁸²

Public transport infrastructure, such as passenger rail services between the major service and employment centres of Bendigo, Swan Hill and Echuca, plays an important role in increasing access to current tertiary institutions, which are mainly centralised in the regional centres.¹⁸³ It is important to maintain and improve this type of access to meet the current and emerging needs of potential students in the region.

Key facts:

56%

of residents aged 20+ did not finish year 12 (2016).¹⁸⁴



82%

of residents aged 20+ do not have a bachelor's degree or higher non-school qualification (2016).¹⁸⁵



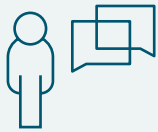
15%

of residents aged between 18-24 are not studying, not employed or looking for work, compared to the state average of 11%.¹⁸⁶



Impact:

- The region's workforce is not meeting the skills and knowledge needed by industry. Availability and lack of engagement with relevant regional education and training opportunities was shown to be exacerbating this skills shortage.¹⁸⁷
- Inadequate skills in the workforce are making businesses less productive and making it more difficult for employers to find suitable employees.¹⁸⁸
- Additional workload is being placed on skilled employees and this is negatively affecting the quality of products and services offered by businesses.¹⁸⁹



Consultation feedback:

Stakeholders attending the Loddon Mallee stakeholder workshop were clear on how important a skilled workforce is going to be for driving growth in the area, expressing concerns around skill shortages, limited training opportunities, insufficient investment into educational institutions and the flight of youths in search of better education and training options. The region needs more local education facilities and better partnerships between industry to attract a skilled and productive workforce. Lack of education opportunities was perceived to be more acute in less populated areas of the region. It was also highlighted that remote and online learning could also be better supported by the telecommunications network.

Workshop attendees noted that research and education can provide commercial opportunities and attract investment to the region. The challenges of clearly quantifying the economic value produced by improved education and research capacity to support the business case for this type of investment was identified as a barrier.



Sector: Telecommunications

Sub-sector: —

Infrastructure gap: Broadband and mobile connectivity

The region's 10 local government areas averaged a 2021 Australian Digital Inclusion Index (ADII) score of 63.6, lower than the Victorian state average of 72. The lowest scores were in the local government areas of Loddon (58) Gannawarra (60), Buloke (60) and Central Goldfields (61).¹⁹⁰ There are supply shortfalls in fixed access broadband and mobile coverage which is impacting the safety of tourist locations and primary production areas. Mobile coverage is often poorer in more remote and rural areas creating a digital divide across the region and reducing productivity and liveability.^{191,192}

There is also limited competition in the market for broadband networks in the region, hence businesses and households face challenges in obtaining affordable connections without compromising on speeds.^{193,194} Internet speeds are of particular importance as a result of a strong uptake in remote working arrangements as a result of the COVID-19 pandemic keeping people home for work and education. Households in the region are finding it difficult to stay productive from home with slow and unreliable internet connections. In parts of Loddon Campaspe some students have been reported as sitting in library carparks to find a better connection.^{195,196}

Key facts:

The region's 10 local government areas averaged a 2021 ADII score of

63.6,

lower than the Victorian state average of 72.¹⁹⁷



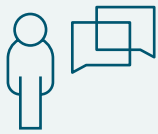
508

black spots have been reported across the region.¹⁹⁸



Impact:

- The tourism industry in Loddon Mallee is suffering from shortfalls in mobile connectivity, particularly with fixed and mobile access technologies where provision of these services is not meeting demand.^{199,200}
- Without improvements over the next five years, patchy connectivity and coverage is going to impede growth in agriculture which is one of the region's biggest industries. High-quality telecommunications infrastructure to enable uptake of Agricultural Technology (AgTech) have been identified as an opportunity for this sector with the potential to boost gross value by up to 25%.^{201,202}
- The COVID-19 pandemic is highlighting issues around connectivity more prominently with working and learning from home meaning households in Loddon Mallee are struggling to adjust with unreliable internet connections.^{203,204}



Consultation feedback:

Participants in the Loddon Mallee stakeholder workshop identified digital and physical connectivity to be one of the highest priorities when addressing infrastructure gaps for the region. Those in the workshop recognised the benefits of having fast and reliable telecommunications infrastructure, since key revenue earners in their region such as agriculture, manufacturing and horticulture all have the potential to be transformed by adopting artificial intelligence, robotics and the Internet of Things. Stakeholders also highlighted the negative impacts of weak digital connectivity, including social isolation, inability to access basic services for everyday life and reduced productivity or inability to participate in the workforce.

Shifting their focus to the present, participants were concerned with the challenges faced by rural areas that are lacking in connectivity options, experiencing slower internet and paying more for internet services.



Sector: Transport

Sub-sector: Freight

Infrastructure gap: Capacity, connectivity and quality of freight infrastructure

The London Mallee region is located between Melbourne, Adelaide and Sydney, with the region’s freight routes providing access to domestic and export markets.^{205,206} However, existing freight networks within the region are struggling to meet demand.²⁰⁷ Mallee’s freight task is growing due to its expanding horticulture, grain, and mineral sands industries.²⁰⁸ Rail freight can offer advantages in costs, capacity, and efficiency, but rail’s share of Victorian freight is currently stagnant or in decline.²⁰⁹

Key facts:

The food industry is contributes to Gross Regional Product in the region, making up

11.6%

of GRP in Loddon Campaspe²¹⁰ and 23.3% in Mallee.²¹¹



The rail freight network in Mallee has more assets in average, poor, or end-of-life condition, compared to regional passenger rail.²¹²

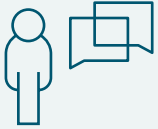


Changing crop yields and freight vehicles are affecting the road freight network’s performance.²¹³



Impact:

- Maintaining and enhancing transport infrastructure will help future industry development, by creating cheaper, faster connections between producers and their processors and markets.²¹⁴
- Transport network improvements continue to present opportunities for industries operating across Loddon Campaspe, including agriculture, manufacturing, mining and energy.²¹⁵

**Consultation feedback:**

Stakeholders noted connectivity as being key priority for the region, with conflicts of use on the region's roads impacting congestion and freight efficiency. Rail infrastructure, intermodal facilities and improvements to road connections were raised as key to increasing sustainability, supporting freight movements and the growth of exports. Stakeholders also expressed disappointment in the reduced scope of the Murray Basin Rail Project.



Sector: Transport

Sub-sector: Public transport

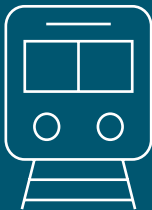
Infrastructure gap: Capacity, connectivity and quality of public transport

Residents in the Loddon Mallee region are highly dependent on passenger vehicles.^{216,217} A range of public transport challenges within the region affect resident’s ability to access work, healthcare, education and services which are increasingly focused in larger centres, particularly for those without access to a passenger vehicle.^{218,219}

Community transport, such as the Mallee Flexible Local Transport project, provides an alternative to public transport through community bus services and information on community and public transport options in Buloke, Gannawarra and Swan Hill.²²⁰ The Victorian Government is also investing in public transport under the Regional Network Development Plan.

Key facts:

Less than
1%
of the
Mallee
workforce
travels to work using
public transport,
including in Mildura
where **53%** of
residents live within
ready access of public
transport.²²¹



In some parts of the region, only a small percentage of residents live within access of public transport. **7%** of residents in the Buloke Shire,²²² **8%** of residents in the Loddon Shire²²³ and **14%** of residents in the Macedon Ranges²²⁴ live within access of public transport.

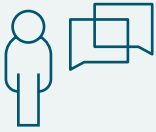


Limited frequency of the regional train and coach network to Bendigo and Melbourne is particularly affecting residents needing to travel to Bendigo Hospital for healthcare services.²²⁵



Impact:

- Timely and reliable access to transport is essential for residents in the Mallee’s rural and semi-rural communities to access the services they need and to foster social inclusion, including for residents who do not own a car or who do not drive—such as older residents, young people, low-income individuals, and people with a disability.²²⁶
- The existing public transport connections are infrequent, including, for example, between Echuca and Bendigo, and between Kyneton and Bendigo. Public transport impacting access to education, health services and support agencies available in centres such as Bendigo and Echuca.²²⁷

**Consultation feedback:**

Stakeholders identified transport connectivity as being key priority for the region due to a history of inefficiencies in the region’s road network and poor access to public transport.

Many stakeholders agreed that high-quality public transport connection by road, rail and air is a point of considerable importance when it comes to supporting passenger mobility and making the region more attractive to skilled workers and their families. Stakeholders identified safety concerns about the conflicts of road use, which could be improved by access to public transport

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It leads reform on key issues including the means of financing, delivering and operating infrastructure and how to better plan and utilise infrastructure networks. Infrastructure Australia has responsibility to strategically audit Australia's nationally significant infrastructure, and develop 15-year rolling infrastructure plans that specify national and state-level priorities.

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The bottom of the page features three large, overlapping geometric shapes: a large red polygon on the left, a dark blue triangle at the bottom center, and a teal polygon on the right.