Regional Digital Plan

GOULBURN

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Foreword
Goulburn Regional Partnership Chair

It is with great pleasure that I present the Goulburn Digital Plan. The Goulburn Partnership was fortunate to have the opportunity to develop this Plan through the Victorian Government's Connecting Regional Communities Program.

The Partnership has heard from Goulburn's communities and industries about the challenges that they face in the areas of digital connectivity, technologies and skills. These challenges are reflected in the evidence highlighted in this Plan which shows that the Goulburn region experiences significantly lower levels of digital access than other regional areas of Victoria and in particular Metropolitan Melbourne – creating a digital divide between communities and businesses.

This plan highlights the shortfalls in digital access in terms of the enabling infrastructure to connect communities as well as the knowledge and skills to fully realise the benefits of being part of a digitally connected world.

At the same time as highlighting gaps and areas for improvement – the Plan also highlights several examples of digital technologies being employed across the region to drive innovation, increase productivity and offer new visitor experiences.

It is hoped that greater awareness of these opportunities and increased accessibility of these digital platforms will continue to shape the way that communities function and industries do business in Goulburn.

The future of our agricultural sector, education, health, business, emergency services and lifestyle will all be increasingly dependent on ready access to the digital world. Regions lagging in digital connectivity will be at an increasingly significant disadvantage. Similarly, if we do not future proof and build resilience into our digital infrastructure then the region will be unable to properly capitalise on future growth.

This Plan outlines the issues associated with the digital divide within Goulburn and makes recommendations for initiatives and interventions to address these challenges. I look forward to seeing how this Plan and its recommendations supports the Goulburn region's communities, businesses and local stakeholders to develop a more digitally connected future for all.

David McKenzie
Chair

What is a Digital Plan?

This Digital Plan is an evidence-based, place-based analysis of the supply of and demand for digital services and skills in the Goulburn region.

The Goulburn Digital Plan identifies gaps and opportunities in the region's digital landscape and makes recommendations on how these gaps can be addressed and what is required for the region to realise its full digital potential.

This Digital Plan forms the basis of our Regional Partnerships' advocacy to all levels of government, as well as industry and community groups. It will also be a valuable resource to other stakeholders in the region for their own advocacy and action.

Addressing the digital divide

Victoria's Regional Digital Plans are the first of their kind, filling the critical information gap needed to effectively reduce the persistent country-city digital divide, defined as regional shortfalls in:

Access to digital services

The ability to effectively use these services

Their affordability relative to their capital city counterparts

A substantial digital gap has been found between Northern Victoria, other parts of rural Victoria and Melbourne:

53.9

Northern Victoria digital inclusion score

56.3

Rural Victoria digital inclusion score

64.9^

Metropolitan Melbourne digital inclusion score

^ Rating from the 2019 Digital Inclusion Index (DII)

Digital issues affecting all regions

Six technology areas have been analysed in the Digital Plans to identify supply shortages in regional Victoria:

Fixed broadband

Ensuring NBN service quality is sufficient to meet resident and business needs

Mobile coverage

Addressing the prevalence of blackspots

IoT (Internet of Things) networks

Availability of low-bandwidth networks to support the uptake of next generation technologies

Public WiFi

Availability of free public WiFi for disadvantaged residents and visitors

Access

Access to government assets to improve services locally

Digital skills

Improving digital literacy, supply of IT professionals, and workforce preparedness for the future

Goulburn's Priorities

The Goulburn Digital Plan makes a series of recommendations to different stakeholder groups for their action. These recommendations include:

Addressing Digital Coverage Gaps

Identify key digital connectivity gaps within the region and exploring opportunities to address these gaps through appropriate and effective solutions

Encouraging Digital Uptake

Increase the utilisation of new technologies and services by facilitating the rollout of emerging technologies and providing opportunities for industries and the community to adopt them.

Building Digital Capability & Skills

Ensure that all of Goulburn's residents are empowered to reach their digital potential by having the skills and knowledge to access and use digital technologies.

Goulburn Regional Partnership: at a glance

The Goulburn Regional Partnership is one of nine Partnerships across the state, established by the Victorian Government, recognising that local communities are in the best position to understand the challenges and opportunities faced by their region.

Approximately 16,500 km²

5 LGAs

Local government areas (population):
- Greater Shepparton (66,000)
  - Mitchell (50,000)
  - Moira (29,000)
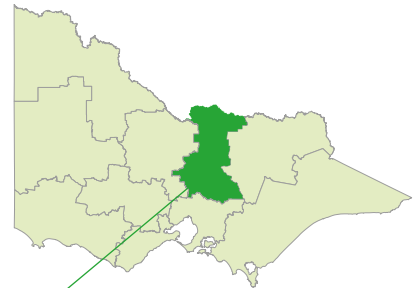- Murrindindi (14,000)
- Strathbogie (10,000)

Primary Production

25% of Victoria's food production
- Fruit horticulture
  - Grains cropping
  - Sheep grazing
- Beef meat and dairy grazing

$8 billion
Gross Regional Product (GRP)

720,000 visitors
Annually

162,000
residents as of 2017

Key Industries
- Health care and social assistance (13%)
  - Retail trade (10%)
  - Manufacturing (10%)
  - Construction (10%)
- Agriculture, forestry, fishing (9%)
  - Education and training (8%)
- Accommodation and food services (6%)
- Public administration and safety (6%)

Assessment of digital needs

Analysis of digital supply and demand has been conducted on a place and sector basis across the region to provide the evidence base necessary for effective digital planning. Places and sectors in the region have been analysed as follows:

Key gaps and needs have been identified according to the following three categories within the broader issue of the digital divide:

Enabling Infrastructure

The physical infrastructure necessary to support demand for digital connectivity across the region

Digital Uptake

The adoption of and demand for digital technologies and systems amongst communities and industries within the Goulburn region

Digital Capability

The underlying knowledge, skills and capacity of communities and businesses to access and use digital technologies or systems

Digital infrastructure analysis

Fixed internet access

Need National Broadband Network (NBN) fixed-line broadband services to meet the needs of businesses and communities across the Goulburn region

Mobile coverage

Need greater availability of 4G networks digital mobile networks capable of supporting the services that business and community expect.

Public WiFi provision

Need greater provision of public WiFi services such as through public libraries and buildings, information centres and other local government initiatives.

LP-WAN IoT availability

Need the availability networks that can support Internet of Things (IoT) technologies that are increasingly relevant to industry applications.

Digital uptake needs

Fixed access connections

Greenfield developments represent opportunity to establish Fibre-to-the-Premises connections over the sub-optimal Fibre-to-the-Node option.

NBN Alternatives

Need greater awareness of options and support for users to explore alternative specialised options for digital connectivity than the NBN.

WiFi Access

Need greater access and use of public WiFI internet services to allow greater uptake of digital services by visitors and those unable to access digital networks.

LP-WAN IoT Adoption

Need to support industry in adopting Internet of Things technologies to enhance the productivity of businesses and ensure that network provision meets industry demand.

Digital capability needs

Digital skills

Need greater development of skills to access and adopt digital technologies for education, social connections and employment

Affordability

Need greater competition in pricing and awareness about options for service providers to reduce cost pressures of digital services on households.

Goulburn Council Priorities

The following are priorities that have been identified by councils that make up the Goulburn region from the broader range of regional issues highlighted in this Plan. There is still a high degree of synergy between the council areas in terms of their digital needs and the issues affecting the region as a whole.

Mitchell Shire Council

- Mobile blackspots reduction and internet connectivity- particularly in growth areas
- Businesses connectivity
- Connectivity on transport corridors

Murrindindi Shire Council

- Access to and reliability of internet services
- Lack of digital skills, knowledge and awareness
- Lack of accurate coverage data

Greater Shepparton City Council

- Lack of business-grade NBN services that are reliable and similarly priced to urban areas
- Digital literacy – particularly in IoT technologies.
- Shortage of digitally skilled workers

Moira Shire Council

- 4G connectivity, especially in key blackspots
- Provision of mobile coverage in peak holiday periods for emergency management
- Pilot alternative connection solutions for businesses such as use of Council towers and fibre networks

Strathbogie Shire Council

- Poor mobile coverage and reliability in key localities such as visitor locations
- Lack of NBN services limits economic development
- Limited capacity of current NBN services
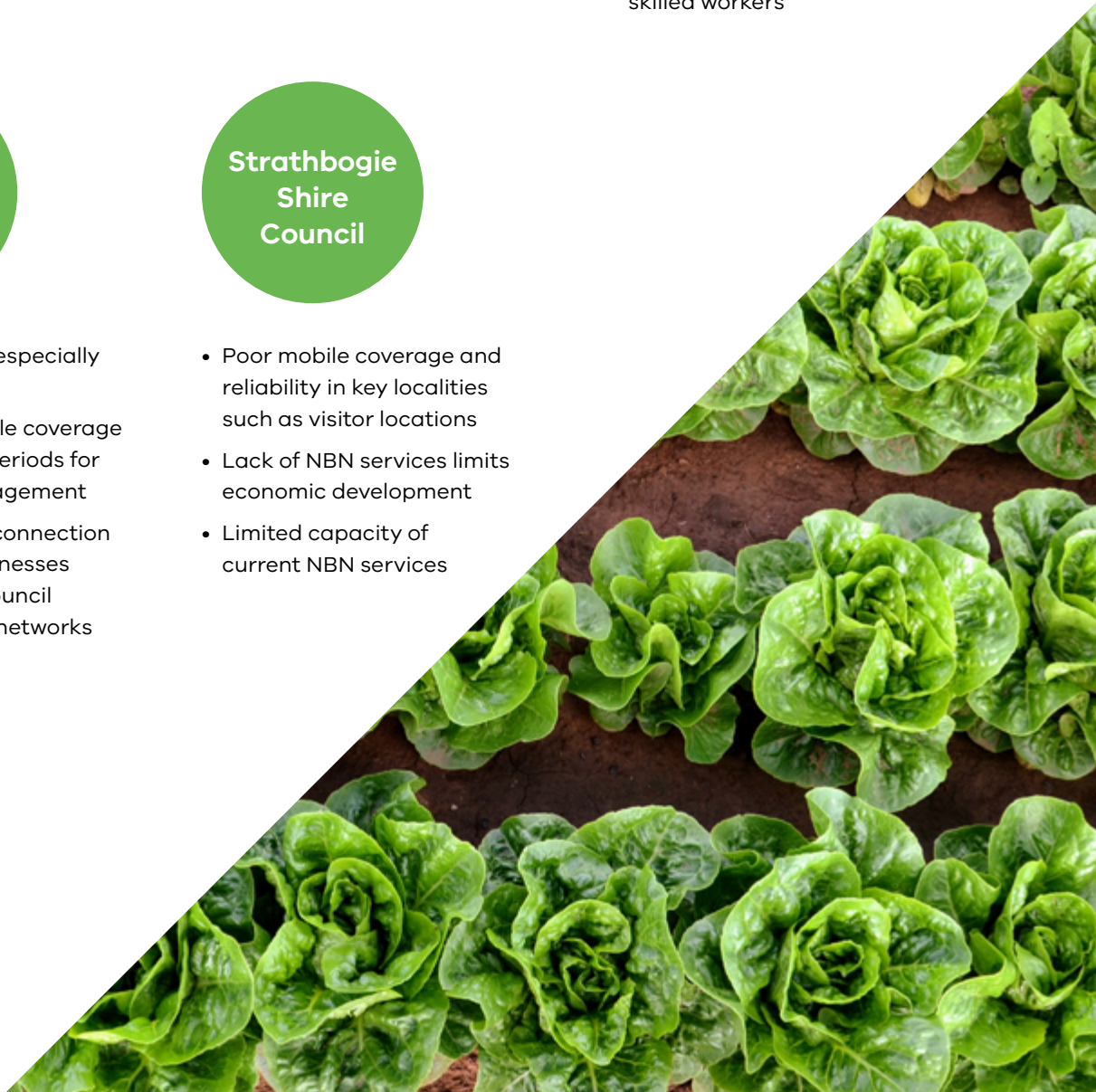
Goulburn Region: key digital issues

The Goulburn Regional Partnership has identified the following key issues for the region:

Enabling Infrastructure

Fixed broadband service within the region currently do not meet the expectations or demand of communities and industry with substandard Fibre-to-the-Node (FTTN) connections limiting connectivity and use of fixed wireless and satellite technologies in smaller localities further compromising connectivity.

Mobile connectivity is variable across the region with good service coverage around regional centres but poor network coverage in outlying areas – including key visitor and emergency management areas of the region.

Networks available for Internet of Things (IOT) connectivity are not currently provided on a scale that meets the current and project future demand amongst industry. Use of these technologies offer significant opportunities for business to increase their productivity and efficiency.

There is a deficiency in public WIFi services relative to demand for affordable digital connectivity amongst visitors and the most vulnerable in communities.

Case Study – Nestle Broadford
Nestle runs a large-scale food manufacturing facility in Broadford, which is located in Mitchell Shire Council approximately 80km north of Melbourne. This facility operates almost entirely via automated processes in which recipes are remotely accessed in real-time from a central source located internationally. This facility suffers from frequent NBN service disruptions which causes a near-total cessation of all production at the facility – at significant cost to the business.

The level of disruption to business processes has been so severe that the business has been unable to further develop its site and has even considered relocation of its facility which would have a significant impact on the local economy.

Case Study – Agriculture Victoria IoT Trial
The Victorian Government is currently undertaking a trial of IoT technologies across horticulture producers in the Goulburn region. Based from Agriculture Victoria's Tatura facility, the program aims to engage over 100 farm sites within Goulburn to host smart sensors and technologies to improve on-farm efficiency and productivity.

The program aims to increase awareness and uptake of this technology by providing the LPWAN connectivity to producers and building their capacity to identify their IoT needs and procure appropriate technologies to implement on-farm.

Examples of technologies that are being adopted include irrigation controllers and localized weather sensors.

Digital Uptake

Across the region, issues around reliability of services and connectivity constraints as a result of the outlined Enabling Infrastructure issues are reducing the motivation of business and communities to explore and invest in digital technologies and services.

There is little knowledge or awareness of alternatives to NBN connections to be able to access digital services. Providers are able to offer business-grade services to customers requiring specialised connections.

There is expected to be significant growth in the field of Internet of Things (IoT) technology which will see increasing investment in devices by industry above that which is currently being undertaken. This will create additional demand for Low Powered Wide Area Network (LPWAN) coverage.

As communities and industry begin to realise the opportunities within digital technologies, demand for reliable services will increase across the region.

Case Study – Goulburn Valley Fruit Fly Tracking

The Victorian Government, in partnership with Goulburn Valley producers has undertaken a two-year trial of "smart traps" which monitor Queensland Fruit Fly (QFF) populations in the region. The devices capture the movement and characteristics of this destructive pest and broadcast data remotely.

This dramatically reduces resources required to manually monitor traps and provides live data on QFF activity which allows for rapid responses to emerging outbreaks.

The devices transmit over mobile networks and puts data directly in the hands of farmers via a smartphone app.

Case Study – GoFish Nagambie

In April 2019 the Strathbogie Shire held the GoFish Nagambie event which was a large-scale fishing competition held on Lake Nagambie. The event was made possible by the development of a mobile app for the event which allowed anglers to participate and compete.

This event saw over 30,000 people visit the town of Nagambie for the event which placed significant strain on the mobile network that the event app relied upon to function. As a result of the mobile networks inability to cope with the increased demand – the app required further investment in order to allow users to access its features offline by pre-downloading content. This limited the ability of the event to realise its full aims and intentions.

Digital Capability

There are significant issues around the affordability of digital connectivity within the Goulburn Region with Goulburn residents paying more for access to digital services as a proportion of their household income than the rural Victorian and metropolitan Melbourne average.

Similarly, the skills and knowledge required to fully realise the potential offered by digital connectivity for education, employment and everyday social connections are significantly lacking within Goulburn.

While the region-wide data highlights a significant digital divide within the region and in comparison to other geographies, there is little place-based data around digital literacy rates. More detailed data will provide greater insight into the needs of communities for greater skills development.

What is apparent from the available data is that those on low incomes, with poor education levels and separated from educational, social and workforce opportunities in urban or regional centres by geography are similarly excluded from connecting digitally which creates a compounding issue of economic and social exclusion.

Case Study – Culturally and Linguistically Diverse Migrants in Shepparton
A recent case study developed by the Australian Digital Inclusion Index 2019 highlighted the experience of culturally and linguistically diverse (CaLD) new migrants to Shepparton. This cohort had a significantly lower level of access (61.2) to digital technology and services than CaLD migrant communities across the nation (64.7). Looking deeper into the component factors of this index score, the two aspects of this community that lead to this digital divide are basic skills and relative expenditure on digital services.

CaLD migrants in Shepparton are below the national average for basic digital skills with a score 3.4 percentage points lower. This is compounded by the extremely high relative expenditure on digital services by this cohort at 32.9 points below the national average score.

These indicators are made more challenging when it is apparent that the demand and positive attitudes for digital connectivity is dramatically higher amongst this diasporic cohort (19.6 points above the national average).

Key findings

Significant places with a shortage of digital infrastructure

There are 17 cities and towns above 1,000 people in the Goulburn region. All of these locations have been analysed in this Digital Plan. Another five localities with less than 1,000 people were also included in the analysis to provide a broader perspective of different town sizes[†].

The analysis has not looked comprehensively at smaller population centres with less than 400 people and looks exclusively at the town centre in each location, noting that this in effect misses people living nearby in sparsely populated areas where services tend to be worse.

While our analysis of public coverage maps indicates there is generally good 4G mobile coverage within population centres, we know from regional consultations that the 'lived experience' for many users can be quite different with continuing demand for better mobile infrastructure.

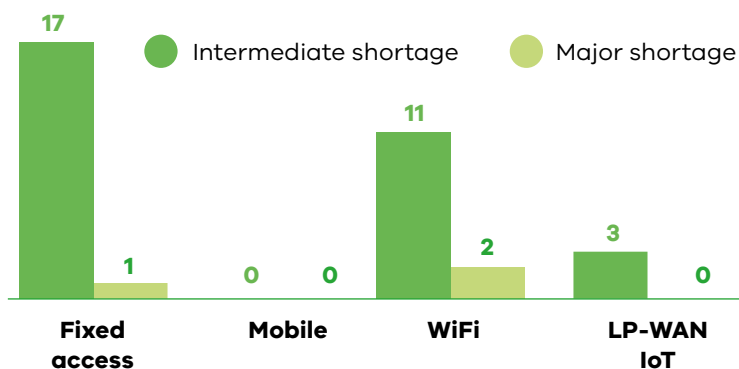**Of the 22 significant places analysed in the Goulburn region, it was revealed that:**

- **Fixed access broadband** had an intermediate supply shortfall for 17 cities/towns/localities*, with one town, Nathalia, suffering a major supply shortfall, indicating the widespread need for business broadband needs to be addressed.

- **Mobile coverage** was assessed as adequate within the main population centres based on multiple carriers indicating they have coverage in the area according to their coverage maps. However, there is concern whether these maps reflect the real-world experience and expectations of users. The impending rollout of 5G technology has the potential to uplift mobile services for early recipients, but smaller regional population centres with an existing coverage deficit are at risk of being left further behind.

- **Public WiFi** access was an intermediate or major supply shortfall for 13 places.

- **LP-WAN IoT** was found to be reasonably good for the level of business, local government and household demand at present which is constrained by lack of IoT knowledge and applications across the region. Three towns, Seymour, Alexandra and Yea were found to have an intermediate supply shortfall for LP-WAN IoT coverage. Over the next 3-5 years IoT demand is expected to grow strongly and closer attention will need to be paid to how these networks develop.

† based on 2016 ABS census data.

* Wallan, Kilmore, Seymour, Tatura, Broadford, Numurkah, Euroa, Alexandra, Beveridge, Nagambie, Wandong – Heathcote Junct, Yea, Kinglake, Avenel, Murchison, Strathmerton, Pyalong.

Number of places with unmet digital needs:

Bar chart legend: ● Intermediate shortage ● Major shortage

Category	Intermediate shortage	Major shortage
Fixed access	17	1
Mobile	0	0
WiFi	11	2
LP-WAN IoT	3	0

Mobile blackspots on transport routes

Road and rail transport corridors need good mobile coverage for continuous mobile connectivity. Fifteen transport corridors were analysed below:

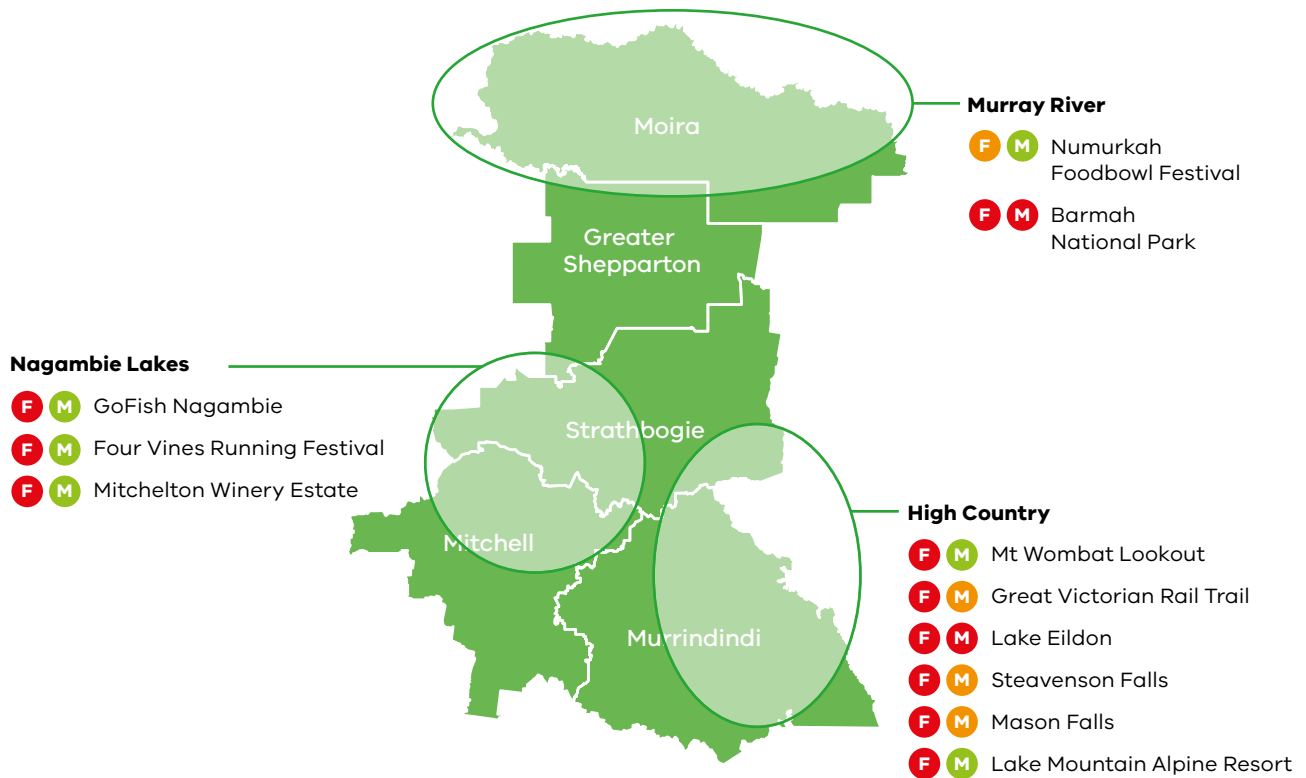| Road Class	From	To	Mobile coverage
Motorways	Wallan	Baddaginnie	🟢 Continuous 4G coverage by three carriers
	Seymour	Toolamba	🟢 Continuous 4G coverage by three carriers
A/B	Toolamba	Tocumwal	🟢 Continuous 4G coverage by three carriers
	Yea	Yarck	🟠 Continuous 4G coverage by one carrier, coverage under construction by second carrier
	Eildon	Yarck	🟢 Continuous 4G coverage by two carriers, partial coverage by third
	Yea	Seymour	🟠 Continuous 4G coverage by one carrier, partial coverage by others
	Yarck	Merton	🟢 Continuous 4G coverage by two carriers, coverage under construction by third carrier
	Narbethong	Alexandra	🟢 Continuous 4G coverage by two carriers, partial coverage by third
	Kinglake Central	Yea	🟢 Continuous 4G coverage by two carriers, partial coverage by third
	Girgarre East	Nalinga	🟢 Continuous 4G coverage by three carriers
	Wyuna East	Esmond	🟢 Continuous 4G coverage by two carriers
	Wallan	Heathcote	🟢 Continuous 4G coverage by two carriers
C	27 roads		🔴 Low coverage in mountainous areas
Rail	Melbourne	Seymour	🟢 4G coverage by three carriers
	Melbourne	Albury/ Wodonga	🟢 4G coverage by three carriers

Legend

🔴 Major supply shortfall

🟠 Intermediate shortfall

🟢 Current supply meets or exceeds demand[+]

It is important to note that the lived experience of communities represented in this analysis might differ to what is represented in the available digital coverage data.

Visitor locations supply shortfall

Visitor sites include year-round attractions, signature annual festivals, periodic events, and hiking trails that are frequently visited. Visitor locations, including 11 permanent spots, six events and one trail were assessed on the adequacy of digital infrastructure[‡]:

Murray River

- **F** **M** Numurkah Foodbowl Festival
- **F** **M** Barmah National Park

Nagambie Lakes

- **F** **M** GoFish Nagambie
- **F** **M** Four Vines Running Festival
- **F** **M** Mitchelton Winery Estate

High Country

- **F** **M** Mt Wombat Lookout
- **F** **M** Great Victorian Rail Trail
- **F** **M** Lake Eildon
- **F** **M** Steavenson Falls
- **F** **M** Mason Falls
- **F** **M** Lake Mountain Alpine Resort

Legend

🔴	Major supply shortfall
🟠	Intermediate supply shortfall
🟢	Current supply meets or exceeds demand[+]
F	Fixed access broadband
M	Mobile service coverage

All visitor locations have issues with fixed access broadband services. Half of the visitor spots analysed appear to have adequate mobile coverage based on public coverage data, but national parks, rivers and trails are underserved.

[‡] Analysis combines operator and visitor user types.

[+] Note that there are reservations, based on local mobile access experience, about the good coverage indicated by public coverage maps.

Primary production supply shortfalls

Primary production in the region revolves around fruit horticulture, grains cropping, sheep grazing, beef meat and dairy grazing. The six locations analysed cover all the major types of primary production seen throughout the Goulburn region.
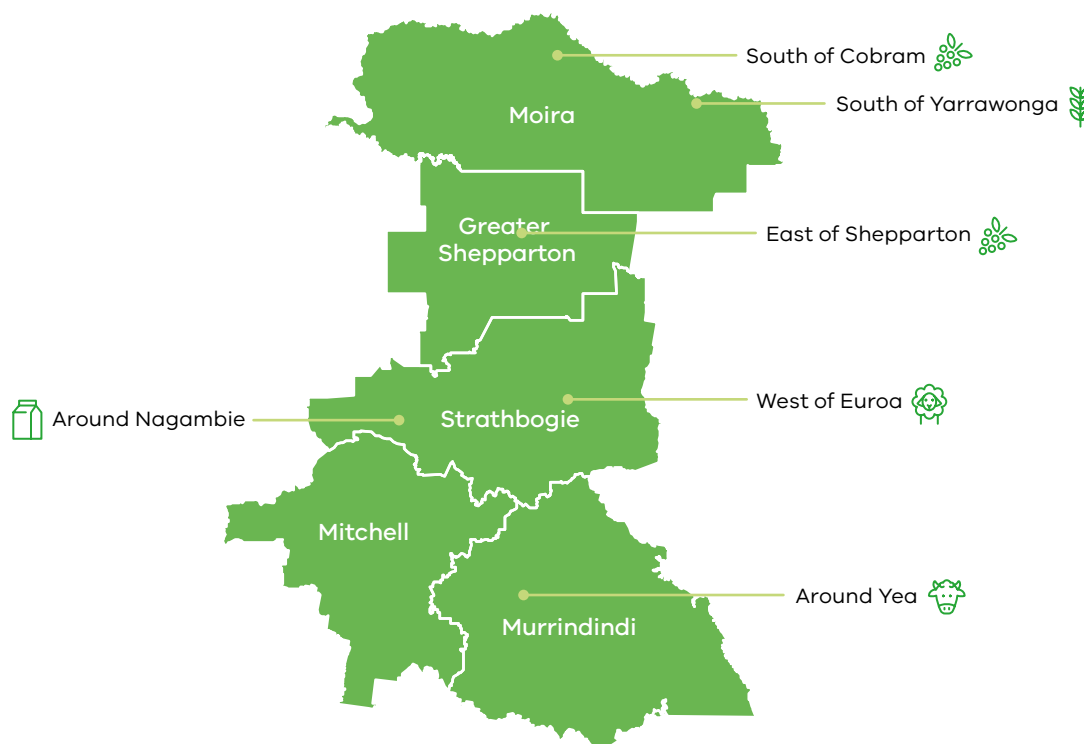
Fixed access broadband services for businesses involved in primary production needs to be addressed. In its current state, the digital infrastructure is unable to meet the region's needs, with all locations found to have a major supply shortfall in fixed access broadband satellite services for business users.

According to publicly available coverage maps, **mobile coverage** appears to be good at the majority of analysed locations. Analysis revealed an intermediate supply shortfall for one area, around Yea which is involved in beef meat and sheep grazing. Despite five sites reporting adequate coverage, it has been highlighted through consultation that the 'lived experience' for residents and businesses is often poorer than what coverage maps suggest, owing to the detail and resolution limitations of the maps.

Two of the locations, west of Euroa and around Yea, were found to have an intermediate and major supply shortfall for **LP-WAN IoT** supported services, respectively.

Looking forward 3-5 years there is likely to be little market driven improvement in mobile coverage, and 5G technology is unlikely to replace 4G in these locations. Rising demand in the face of a largely static supply will mean the unmet demand situation will worsen.

Local governments and regional businesses will need to consider leveraging government assets for cost-effective bespoke solutions, and the Commonwealth and state governments should develop more flexible mobile blackspot programs tailored to the region and its needs.

Mobile coverage nearer population centres is better than services available in more remote primary production locations, however obtaining a clear picture of where specific gaps exist or where there is weak and inadequate coverage is difficult with existing public data. Better quality coverage data is becoming increasingly important to identify priority locations in need of better mobile infrastructure.

Recommendations

PRIORITY	RECOMMENDATION	LEAD
Addressing Digital Coverage Gaps	Continue to advocate for funding for mobile blackspots through the Commonwealth Governments Mobile Blackspot Program	Local Government
	Explore alternative digital connectivity solutions and develop business cases for connectivity short falls impacting businesses and communities.	Victorian & Local Governments
	Identify and work with businesses or industries within the region that require access to alternative connectivity solutions	Victorian & Local Governments
	Continue to work with telecommunications providers to improve data capture and develop more accurate data on network coverage and quality.	Victorian Government
	Encourage further uptake of IoT technologies and drive demand for greater network coverage.	Victorian Government
	Explore opportunities to support regional major events, peak visitor periods and during natural disasters by identifying cost effective solutions for alternative, temporary mobile network capacity solutions.	Victorian Government
	Identify opportunities for businesses to collaborate to attract shared services or infrastructure to reduce cost burdens and utilise infrastructure more efficiently	Local Government
	Build telecommunications network capacity and resilience to support reliable connectivity during natural disasters and improve resilience of enabling infrastructure and services such as power.	Victorian & Local Governments
Encouraging Digital Uptake	Build awareness and encourage investment by businesses and government in Internet of Things technologies to drive efficiency.	Victorian Government
	Work with developers and local government to ensure the highest possible grade of digital connectivity in greenfield developments.	Local Government
	Advocate for service level agreements that underpin high-quality, reliable and affordable services that meet end-user needs. This includes ensuring there are clear and accountable processes between customers, service providers and NBN Co to address enquiries and service issues.	Victorian & Local Government
Building Digital Capability & Skills	Develop guidance toolkit and other collateral to inform industry, businesses and communities around suitable service options	Victorian Government
	Promote the range of digital capability training opportunities on offer to Goulburn's residents and workers.	Victorian Government
	Identify and roll out programs where supply of training would improve a sector's capability ie. small tourism operators.	Victorian Government
	Work with disadvantaged cohorts in each Local Government Area to improve basic digital skills and access to appropriate and affordable digital services.	Victorian & Local Governments
	Explore the merit of establishing digital hubs within existing accessible community assets (ie. libraries) to support skills development and address access and affordability issues.	Victorian & Local Government
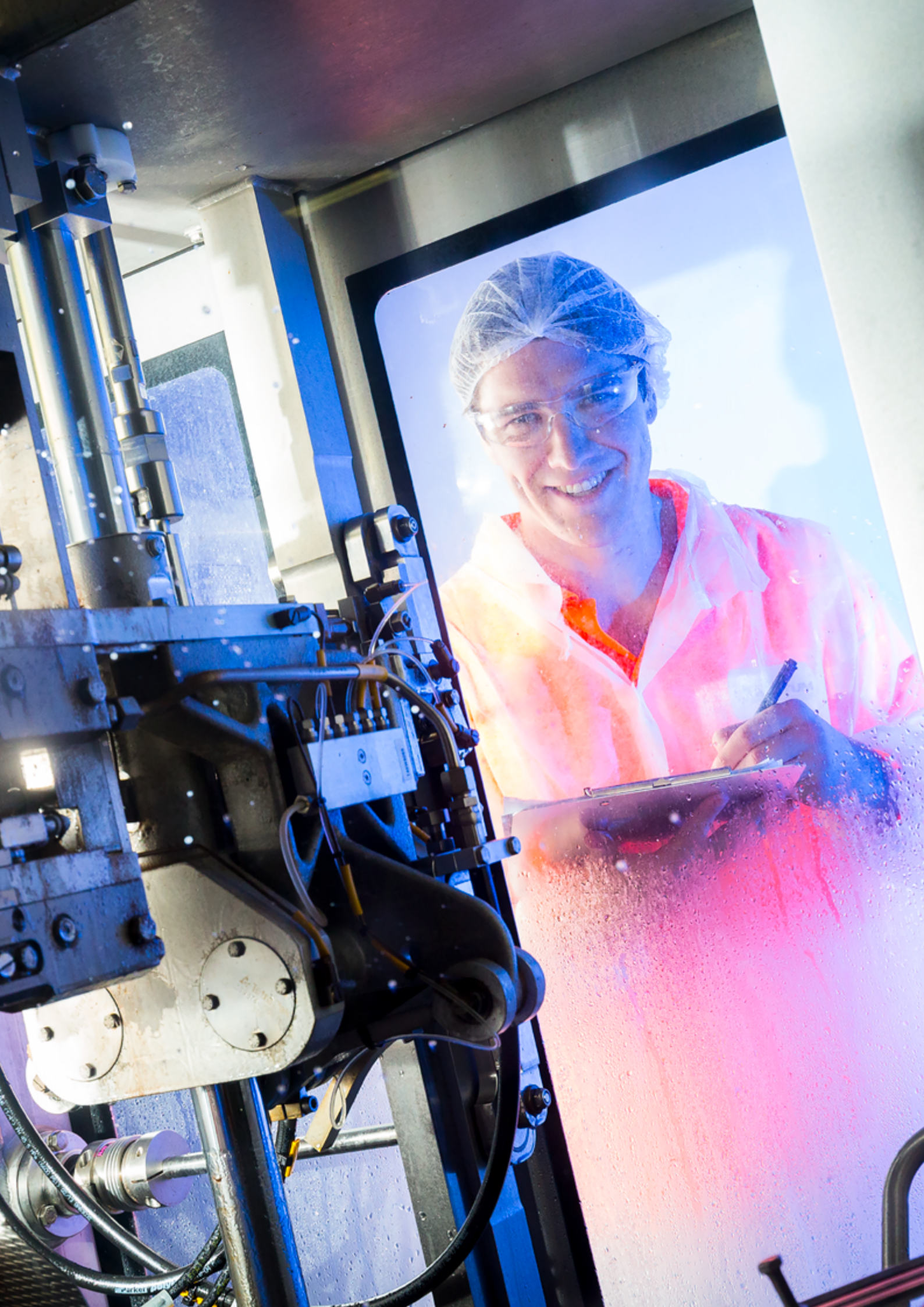
Next steps

The analysis and recommendations that have come out of the Goulburn Digital Plan will form the basis of our Regional Partnerships' advocacy to the Commonwealth, Victorian and local governments, as well as industry and community groups in developing the future digital landscape of our region.

This Digital Plan highlights the region's current gaps, needs, issues and opportunities in digital infrastructure and where our future demands may lie, bringing to light the areas where our efforts should be focused to bridge the digital divide. By addressing these priority areas, we will ensure our local residents, businesses and community flourish as the digital age continues to advance.

The Goulburn Regional Partnership would like to thank the members of Goulburn Regional Digital Plan Working Group who generously gave their time towards the development of the Goulburn Regional Digital Plan.

Contact Us

If you would like to discuss the Goulburn Regional Digital Plan please contact the Goulburn Regional Partnership on:

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We look forward to hearing from you.

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