REGIONAL PARTNERSHIPS BARWON

Our Good Growth Principles

- Environmentally and socially sustainable
- Benefits must be shared equitably
- Embrace and embed our Aboriginal culture
- Safe, vibrant and highly livable communities

Acknowledgement of Country

We acknowledge the traditional custodians of the land on which we live.

We recognise their continuing connection to land, waters and culture and pay our respects to their Elders past, present and emerging.

The Barwon Partnership supports initiatives that encourage greater unity, knowledge, cultural awareness and respect for the first occupants of our land.

We work with Traditional Owners Aboriginal Corporations to encourage stronger community links and local representation.

REGIONAL PARTNERSHIPS BARWON

VICTORIA State Government

Barwon Regional Partnership – Digital Discovery Project

Barwon Regional Partnership

COMMUNITY

Professor Iain Martin (Chair)
Vice-Chancellor and President of Deakin University
Tracey Slatter (Deputy Chair), **CEO, Barwon Water**
Bill Mithen, **CEO, Give Where You Live Foundation**
Frances Diver, **CEO, Barwon Health**
Melinda Kennedy, **Co-Director Murri:yul consultancy**
Nat Anson, **CEO, Urbis Geelong**
Lisa Kingman (OAM), **Independent community advisor**
Jennifer Cromarty, **CEO, Committee for Geelong**
Corrina Eccles, **Wadawurrung Traditional Owner**
Peter Dorling, **Business Manager, Avalon Airport**

GOVERNMENT

Penelope McKay, **Deputy Secretary, Corporate Services, DJPR**
Robyn Seymour, **CEO, Surf Coast Shire Council**
Martin Cutter, **CEO, City of Greater Geelong**
Anne Howard, **CEO, Colac-Otway Shire Council**
Martin Gill, **CEO, Borough of Queenscliffe**

RDA Barwon South West has a direct link to the Australian Government through Minister McBain

Australian Government

The Hon Kristy McBain MP
Minister for Regional Development, Local Government and Territories

Regional Partnerships have a direct link to the Victorian Government through Minister Shing

VICTORIA State Government

The Hon Harriet Shing MLC
Minister for Regional Development
Minister for Water
Minister for Equality

Regional Economic Development focus

Regional Development Australia

REGIONAL PARTNERSHIPS BARWON

REGIONAL PARTNERSHIPS GREAT SOUTH COAST

Social, Economic and Environmental focus

RDA Barwon South West Committee was established by the Australian Government and is supported by the Victorian Government through RDV. Chair is endorsed by both Ministers.

RDA Barwon South West Committee members include: Industry and business members with global, national and local experience in advanced manufacturing, agriculture, education, tourism and energy, supported by the **Regional Director of RDV Barwon South West**

RDV Barwon South West

Regional Director and officers coordinate and connect the activities of the RDA and both Regional Partnerships.

Barwon Regional Partnership and Great South Coast Regional Partnership were established by the Victorian Government and are supported through RDV.

Regional Partnerships' members include: Business and community members, the CEOs of our Local Government Areas, an RDA Barwon South West Committee member, the **Regional Director of RDV Barwon South West** and a senior officer (Dep Sec) from the Victorian Government.

BARWON SOUTH WEST REGIONAL STAKEHOLDERS

Wadawurrung Traditional Owners Aboriginal Corporation • Eastern Maar Aboriginal Corporation
Gunditj Mirring Traditional Owners Aboriginal Corporation • Deakin University • Avalon Airport • GeelongPort
Port of Portland • Committee for Geelong • Committee for Portland • Major employers • Peak industry bodies
Local business incubators • Tourism Greater Geelong and the Bellarine • Great Ocean Road Region Tourism
Grampians Tourism • Discovery Coast • Great Ocean Road Coast and Parks Authority • RICE
Geelong Chamber of Commerce • Geelong Manufacturing Council • Gordon TAFE • South West TAFE
Local Learning and Employment Networks • Barwon Water • Wannon Water • Southern Rural Water

G21

SouthWest Victoria Alliance

LOCAL GOVERNMENT

Regional Development Victoria (RDV)

Serving all 6 RDA Committees and all 9 Regional Partnerships with:

Shared evidence • Data analysis • United voice • Joined-up priorities • Capital city connections • Coordination • Pathways to government

Barwon is one of the fastest growing regional locations in Australia.

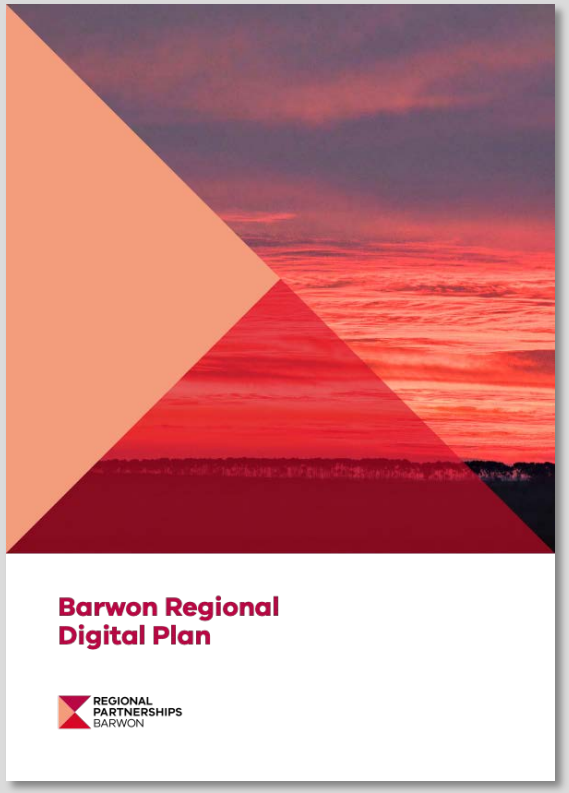
Our growth presents a once in a lifetime opportunity but must be driven with care.

Good growth principles underpin everything we do.

Good Growth

- **Environmentally and socially sustainable** economic and population growth
- **Benefits must be shared equitably**, supporting the vulnerable and marginalised
- Embrace and embed our region's rich **Aboriginal culture**
- Create and maintain **safe, vibrant, highly livable communities**

2019

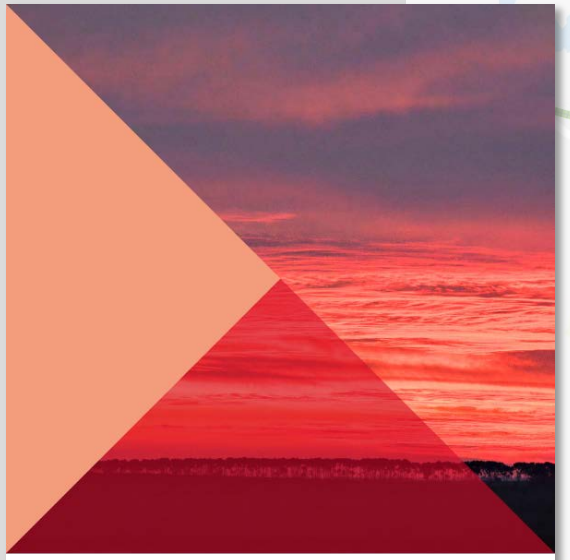


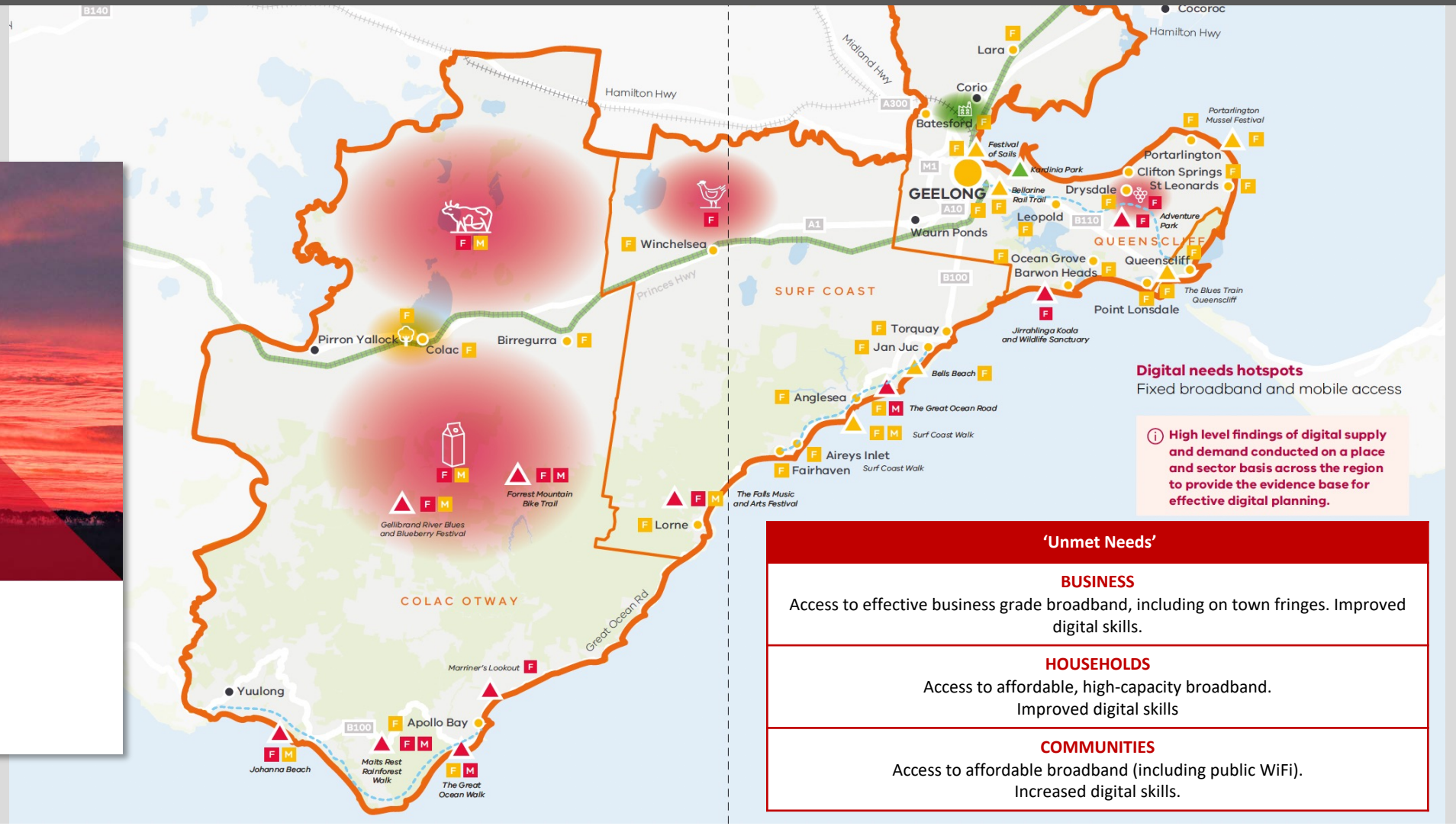
2022

2022

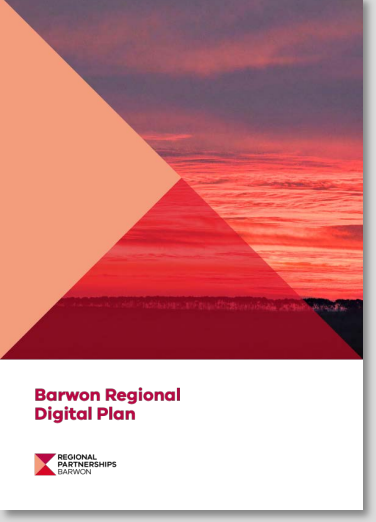
Barwon Regional Partnership – Digital Discovery Project

2019





'Unmet Needs'
BUSINESS Access to effective business grade broadband, including on town fringes. Improved digital skills.
HOUSEHOLDS Access to affordable, high-capacity broadband. Improved digital skills
COMMUNITIES Access to affordable broadband (including public WiFi). Increased digital skills.



2019

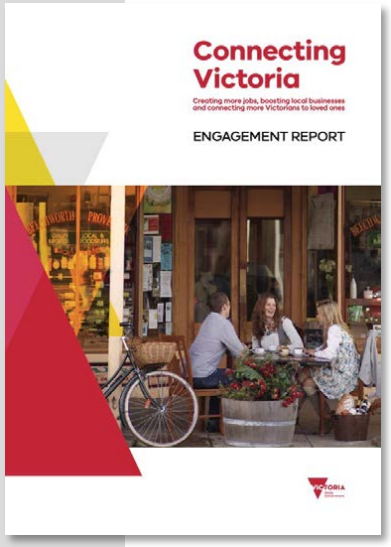
Digital divide and intensity

A comparison of the current and future digital intensity requirements of the main Barwon industries based on employment is outlined.

Industry	Digital intensity now (current practice)	Digital intensity needed in 3-5 years (best practice)
Healthcare & social assistance	Fixed access for patient records	Patient & GP fixed and mobile connectivity. Digitisation of records, analytics & data transparency. Robot-assisted operations
Education &training	School, home fixed & mobile access	Student fixed & mobile home connectivity, online learning. Augmented & virtual reality in classrooms for enhanced teaching methods
Construction	Fixed and mobile connectivity	Fixed & mobile connectivity, digital models
Tourism	Mobile coverage of tourist hot spots	Mobile road coverage. WiFi & IoT at popular venues. Augmented/virtual reality tours
Manufacturing	Fixed connectivity	Fixed connectivity, industrial IoT, fault prevention & data analytics for logistics
Public admin & safety	Resident fixed & mobile connectivity, connected public infrastructure	Resident fixed & mobile, IoT-for Smart Cities, enhanced security & digital profiles for individuals
Agriculture/ forestry	Mobile coverage of farming areas	Wide narrowband and broadband IoT access, apps and skills for intensive and broadacre horticulture, cropping & livestock
Retail trade	Shop and building access	Retail at threat from online shopping. IoT can help retail stores connect to customers through promotions and mobile payment methods

(2022-24)

Key themes from community consultation in *Connecting Victoria*



Economic uplift

Businesses that don't have high-speed internet told us they are missing out on economic growth opportunities.

Residents told us that bad connectivity, reliabiity and ongoing outages make it difficult to perform remote work, study online and socialise through the internet.

Poor connectivity is a big deterrent for regional migration.

Working and learning from home

The COVID-19 pandemic has led to big changes in the way we live, accelerating the shift to remote working and learning. Victorians who responded through the consultation process said that this has placed a lot of pressure on connectivity infrastructure.

Mobile and broadband speeds have suffered, with bottlenecks and outages, making it difficult for households where people are working or learning from home.

Safety

Victorians that responded felt that connectivity was critical during natural disasters like bushfires and storms, power outages, and emergencies involving health and safety. They said that unreliable connectivity makes it difficult to prepare for emergencies and manage risks.

During emergencies, better mobile and broadband coverage is needed so that community members can receive emergency messages and ask for help in real time.

Social Inclusion

Respondents told us the COVID-19 pandemic has made Australians even more dependent on digital technology – in our economy, everyday lives and jobs.

They said this reliance will increase as more interactions move online. However, some members of the community cannot carry out these activities because they do not have access to high-speed and reliable mobile or broadband services.

Telehealth

Victorians told us that attending health appointments in person is challenging for many people who live in regional, rural and remote areas.

Access to telehealth and other online services such as mental health and child health therapy sessions helps to overcome this, but Victorians told us that current connectivity speeds and bandwidth don't always support this.

Service Quality

People we consulted with said that broadband and mobile connectivity services in many places across the state are still not good enough.

While some infrastructure has been upgraded, residents are still waiting months to be connected. They reported that connectivity issues happen with all service providers.

We heard that long outages are common, and some areas are using old technology with no defined plans for improvement.

THE VISITOR ECONOMY

Tourism is a key focus for many locations. Participants told us that some communications infrastructure cannot support the demand during peak tourism seasons, which affects businesses and leads to poor experiences for visitors. Closed international borders and other COVID-19-related restrictions have boosted intrastate travel, which has increased the load on infrastructure.

Participants said that some areas will need better internet and mobile coverage to support existing demand as well as live streaming, for example, arts, music, and sporting events, to engage a wider audience.

AGRICULTURE TECHNOLOGY

Lack of connectivity was highlighted as a big factor that is slowing down digital advancement in agriculture, including use of the Internet of Things (IoT) and robotics or automation.

Participants said high-tech agriculture needs 5G and enhanced connectivity to support on-farm operations, supply chain management, and to collect data about things like soil quality and water use in real time.

BUSINESS OPPORTUNITIES

Participants reported that limited mobile and broadband connectivity is negatively affecting businesses in some areas.

Business owners are reluctant to invest in equipment to improve production and increase competitiveness if there is a chance it won't work due to connectivity issues.

GROWTH AREAS

We were told that many places are experiencing rapid development and growth, and infrastructure has not been able to cope, leading to slow connectivity and ongoing outages. To make the most of this growth, participants said that connectivity infrastructure needs to be upgraded.

They also said that the planning process for new developments including housing estates and digital hubs needs to identify appropriate sites for new mobile towers early and ensure high-speed broadband connectivity is provided.

2019-21

Digital connectivity

Access to reliable internet and mobile services allows for access to new markets, facilitates efficiency gains and opens up opportunities for innovation. Good digital connectivity can also facilitate more inclusive access to services and flexible working arrangements.

63 to 70

Australian Digital Inclusion Index Score in Barwon in 2021[6]

(Victorian average: 71)

	Fixed broadband access	Mobile access
Cities and large towns, such as Geelong and Colac	Generally comparable to metropolitan Melbourne with some access to FTTP and widespread provision of FTTN within town centres, but fixed wireless and satellite serving the town fringe and beyond	Generally comparable to metropolitan Melbourne with multiple carriers operating 4G networks, but quality and reliability of access can fade beyond town centre
Small towns and localities, such as Batesford and Birregurra	Generally provisioned with fixed wireless services in the town centre with the fringe and surrounding areas receiving satellite. Some small towns receive higher-speed FTTN or FTTC services	Less capacity and reliability than in larger towns. Better quality within the town centre than when moving into surrounding areas and between towns
Primary production areas, such as dairy grazing southwest of Colac	Lower capacity fixed broadband technologies like fixed wireless and satellite available due to remoteness of these farms / businesses. Fixed wireless more available closer to population centres	Variable service quality across primary production areas. Better when closer to population centres and unimpeded by local topography
Tourist locations, such as Bells Beach	Most relevant to tourist operators and businesses. Higher capacity technologies like FTTN available to operators in town centres, but lower capacity services like fixed wireless and satellite in more remote tourist locations	Often weak coverage in remote locations such as trail walks and national parks and network limitations in accommodating large influxes of visitors such as periodic events
Transport corridors, such as major highways and rail lines	N/A	Stronger and more reliable coverage on large highways and rail lines, with service quality and reliability compromised on smaller roads and in more remote areas

Source: (Infrastructure Victoria, 2019)

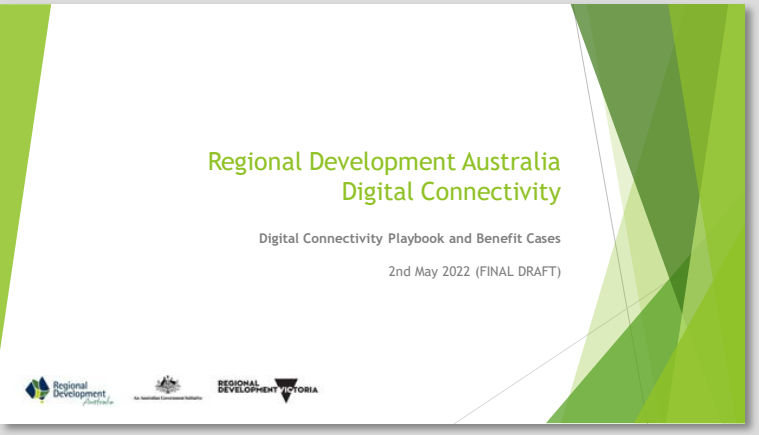
2019-21

Barwon Regional Economic Development Strategy (REDS)

STRATEGIC DIRECTIONS

- **Accelerate the transition to new and high-value manufacturing opportunities**
  Developing future-focused products and advanced manufacturing capabilities will, along with existing supply chains and transport infrastructure, drive new and high-value manufacturing opportunities.
- **Further the innovation and skills ecosystem**
  Existing innovation hubs and significant local research expertise will contribute to business incubation, productivity growth and a future-focused education and training sector.
- **Realise the potential of the visitor economy**
  The diverse range of tourism offerings, including natural landscapes, creative industries, Aboriginal heritage and emerging agritourism, strongly positions the region to take advantage of changing domestic visitor trends.
- **Maximise the economic benefit from expanding service-based sectors**
  Strong population growth and changing demographics have driven service-based sectors with a skilled workforce – cultivating these sectors is an opportunity for long-term growth and wider economic benefits.
- **Build a sustainable and climate-resilient economy**
  Renewable energy generation, including rooftop and large-scale solar, wind and renewable hydrogen, complement strong community interest in resource recovery and recycling to drive sustainability in the region.

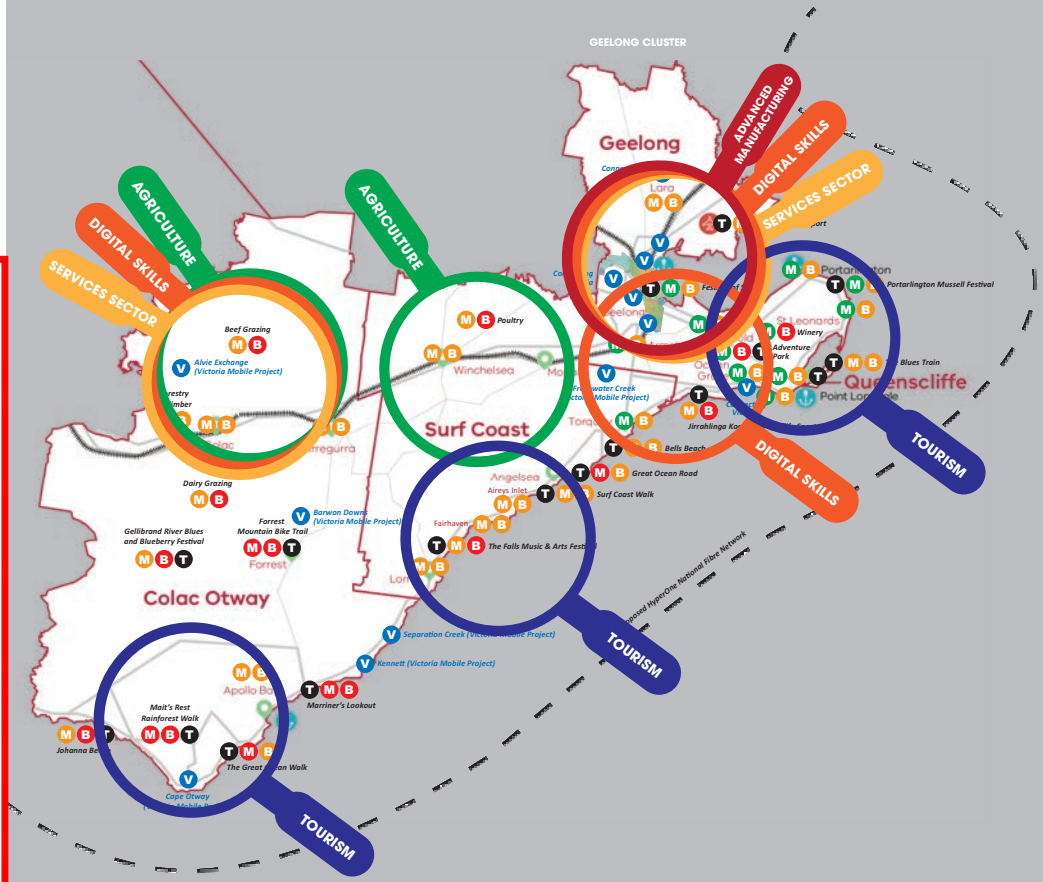
2022

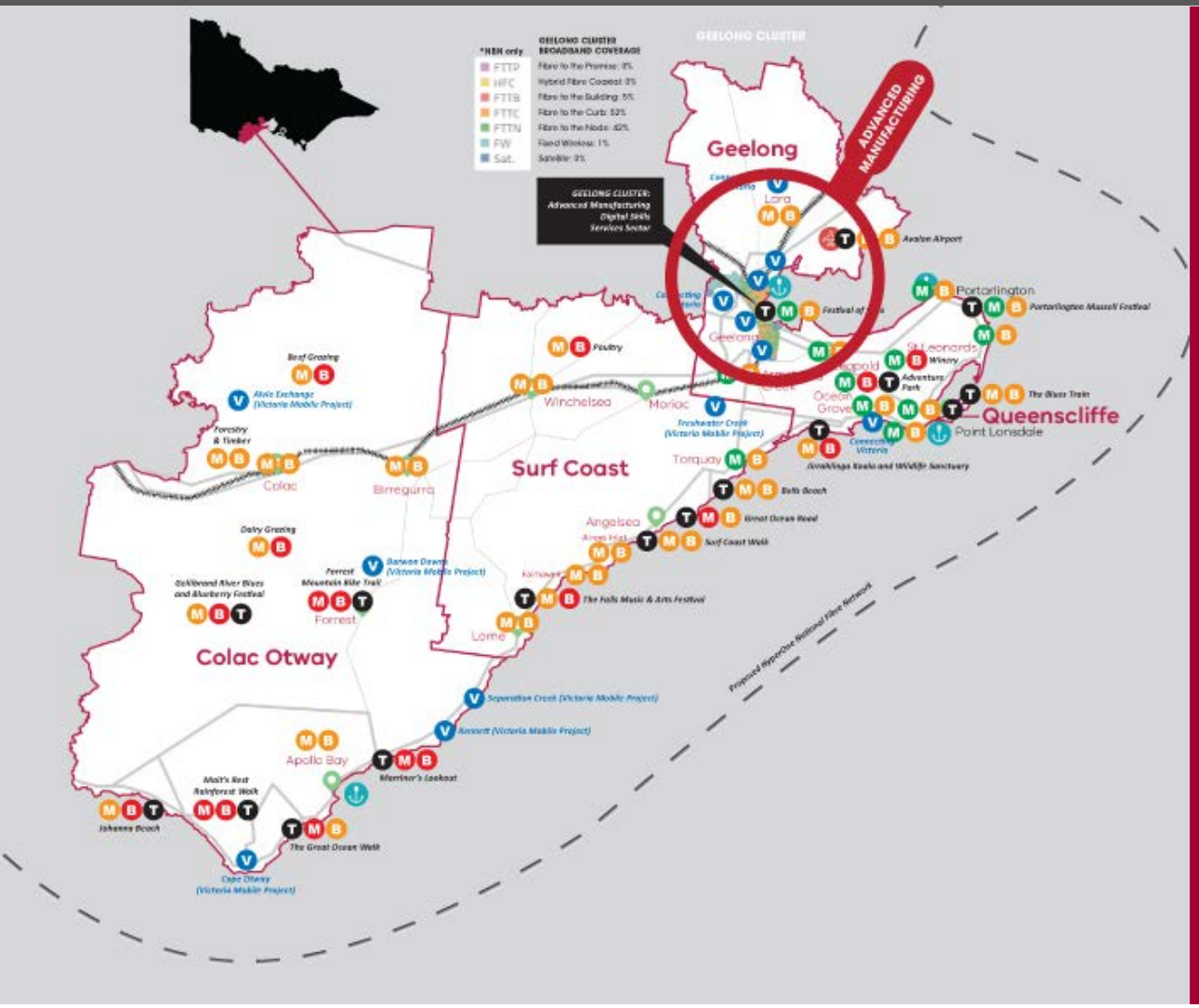


- BENDIGO CLUSTER (pg 37)
- TRARALGON CLUSTER (pg 46)
- NORTH EAST CLUSTER (pg 55)
- GEELONG CLUSTER (pg 64)

- ADVANCED MANUFACTURING
- AGRICULTURE
- HEALTHCARE (SERVICES)
- TOURISM
- SKILLS

- DIGITAL INCLUSION (pg 129)





WHAT:

Advanced Manufacturing

WHERE:

Geelong Cluster

(Geelong & North Geelong)

HOW:

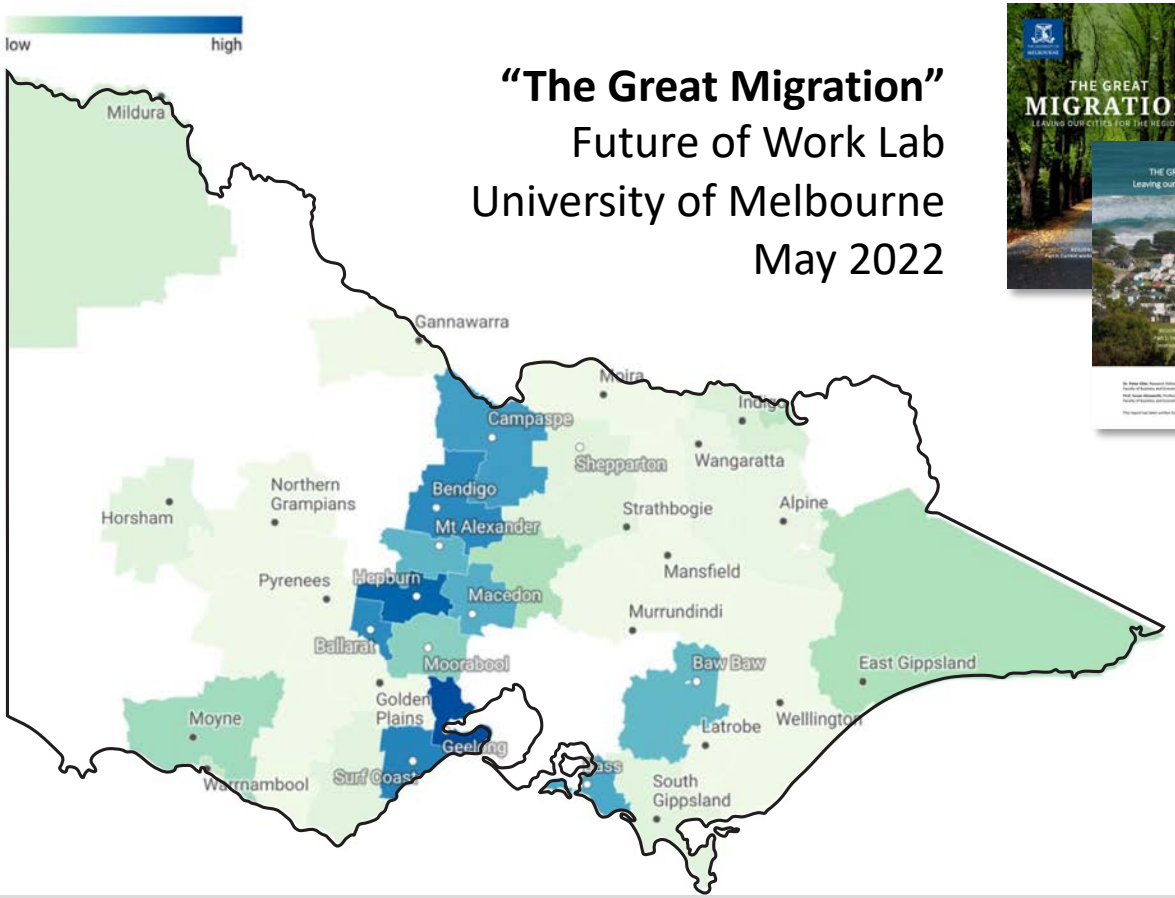
Infrastructure

(High-capacity broadband, express routes, data centres, 4G/5G, ???)

Access

Affordability

Capability



"The Great Migration"
Future of Work Lab
University of Melbourne
May 2022

Geelong and Surf Coast migration opportunities

Post-COVID movers - 25-44 age group.

Pre-COVID movers - 45–64 age group.

- Education and Training sector (20%)
- Healthcare and Social Assistance (15%)
- Professional, Scientific and Technical Services (13%)

27% commuting to a metropolitan region for work.

37% living and working in the same regional postcode.

65% would like work from home 2-3 days per week.

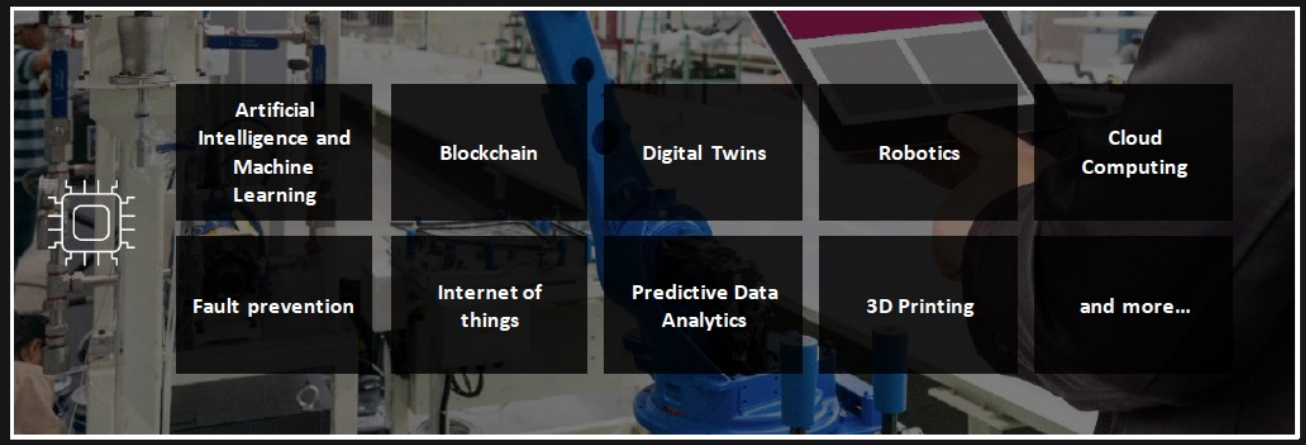
31% would like to end their commute to work.

Only 23% actively looking for employment regionally.

Only 17% interested in sharing a co-working space.

INDUSTRY FOCUSED - ADVANCED MANUFACTURING

Manufacturing companies globally are adopting new and emerging technologies...



.. to adopt these technologies and advanced capabilities, manufacturers need:

DIGITAL CONNECTIVITY
Fit-for-purpose, modern, fast and reliable digital connectivity

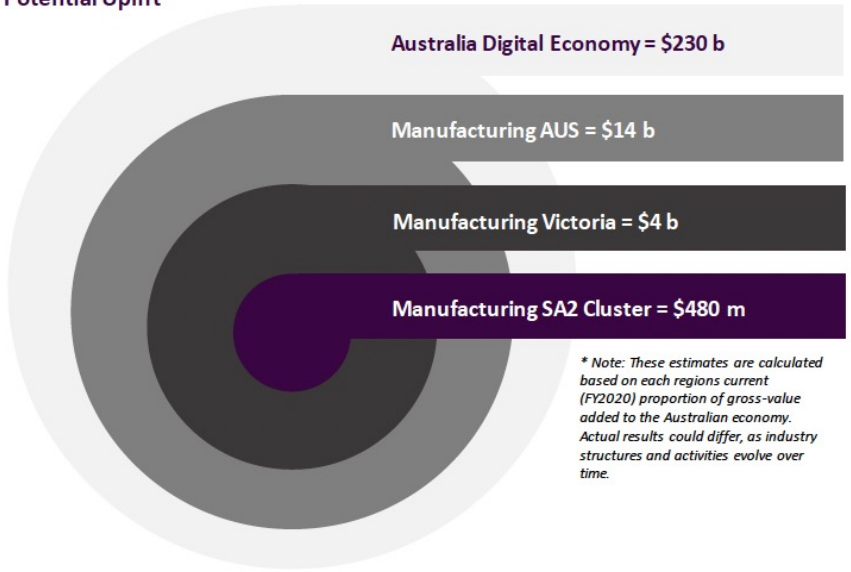
SKILLED WORKFORCE
A workforce with the right digital and STEM skills

Investing in connectivity now has the potential to unlock a $480m+ economic uplift in the future through greater participation in the digital economy

The digital economy opportunity to be unlocked

Connecting Australia's digital economy has the potential to add over $230 billion by 2030. This can be delivered through the potential of "4.0" technologies, such as the Internet of Things (IoT), Artificial Intelligence (AI) and 5G. Whilst jobs and business growth will initially be centered around urban areas, emerging regional towns have significant growth opportunity. Proportionally, the most significant uplift in job growth will be seen in Australia's regions – where digitisation has the potential to open up and expose local businesses to new opportunities.

Potential Uplift*



** Note: These estimates are calculated based on each regions current (FY2020) proportion of gross-value added to the Australian economy. Actual results could differ, as industry structures and activities evolve over time.*

Source: PwC - Digital Economy impacts analysis conducted in 2020, based on global PwC research applied to Australian GDP

Unlocked by

Enhancing digital connectivity in the manufacturing cluster enables participation in the digital economy – and unlocks the broader digital economy opportunity

Direct economic uplift of digital connectivity to FTTP

Enabling digital connectivity in the **manufacturing cluster** will enhance productivity across the industry, delivering a ***direct*** potential economic uplift of:

Manufacturing
$14m

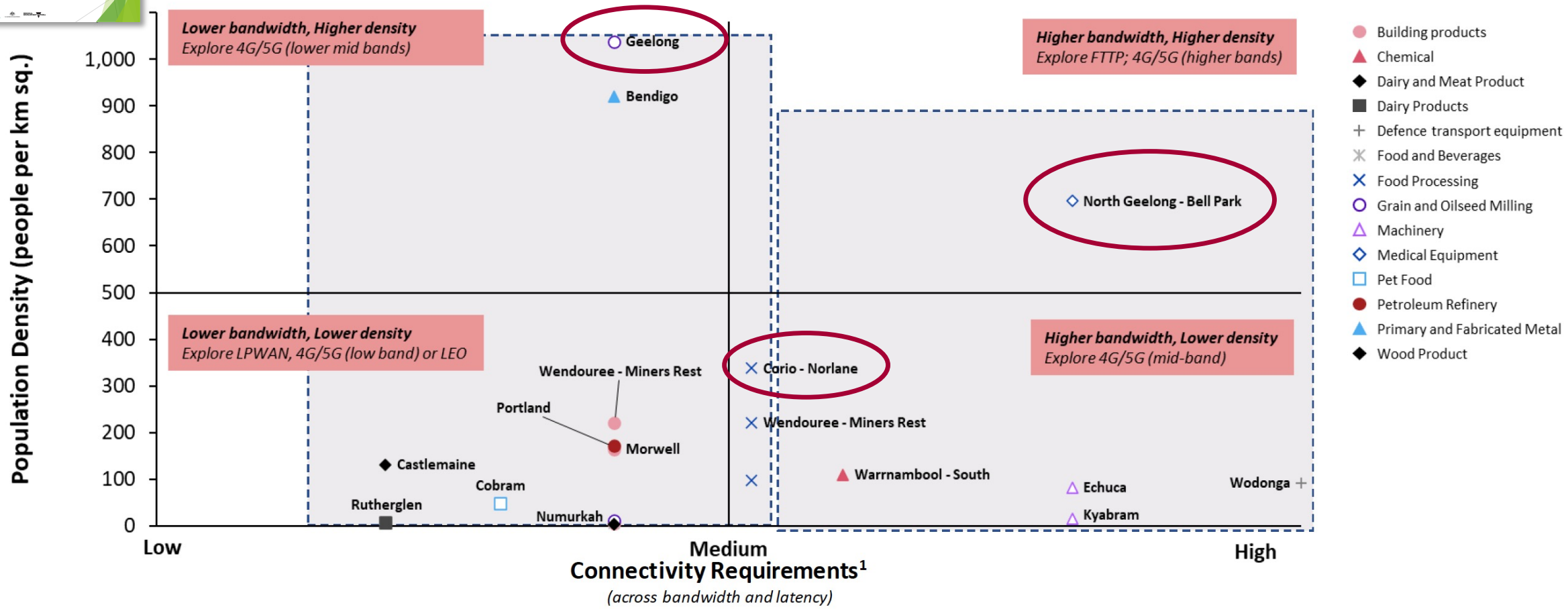
Economic Uplift from connectivity:
Economic uplift potential indicates the cumulative benefit from transitioning from current broadband fibre connectivity, to FTTP fiber connectivity over five years (2022-2026). This represents the incremental benefit of enabling this technology over the current fibre coverage level. It is important to note that the results are based on historical industry concentrations within SA2s and forecasted industry growth rates at an aggregate level. They do not account for interactions between industries or the potential restructuring of industry concentrations at a granular level. As such, only a 5-year analysis period is chosen – over a longer period, a model accounting for these potential shifts would be required.

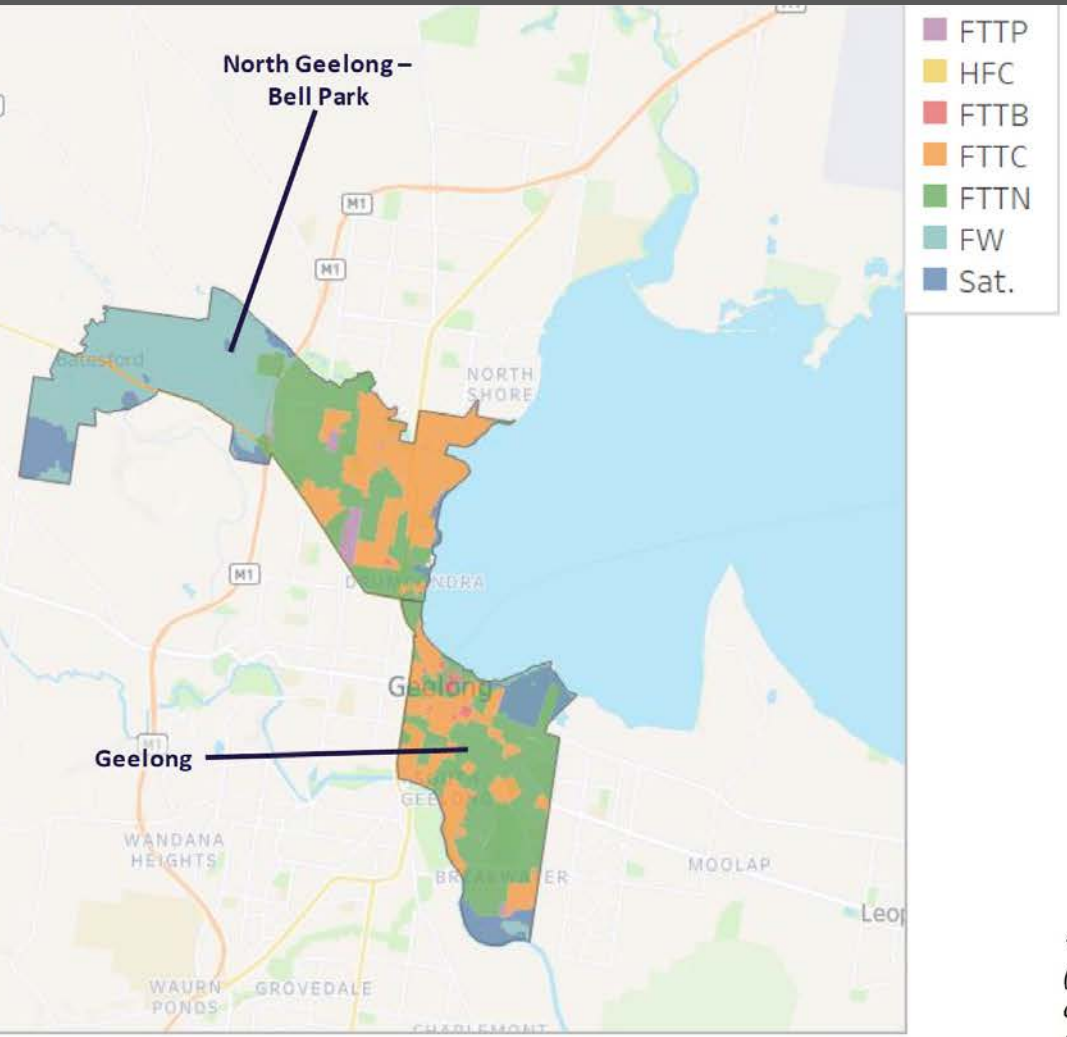
FTTP (the fixed broadband ideal state)
FTTP is considered the ideal state for fixed broadband* and therefore this economic uplift potential represents the maximum potential uplift. This is *not* a technology solution recommendation. The actual economic uplift will differ based on the technology solution that is considered fit for purpose.

*FTTP is a ideal state under current technologies for fixed broadband, 5G for mobile, and in reality a mixture of technologies will be needed to address the challenges.

INDUSTRY FOCUSED - ADVANCED MANUFACTURING

Advanced Manufacturing





Source: ACCC

BROADBAND COVERAGE
Fibre to the Premise: 0%
Hybrid Fibre Coaxial: 0%
Fibre to the Building: 5%
Fibre to the Curb: 52%
Fibre to the Node: 42%
Fixed Wireless: 1%
Satellite: 0%

MOBILE*
100% of the cluster *(~35 Sq Km)* **has mobile coverage at spectrum frequencies ≥1.8 GHz** *

Please note: Connectivity 'Lived experience' can diverge from publicly available maps.

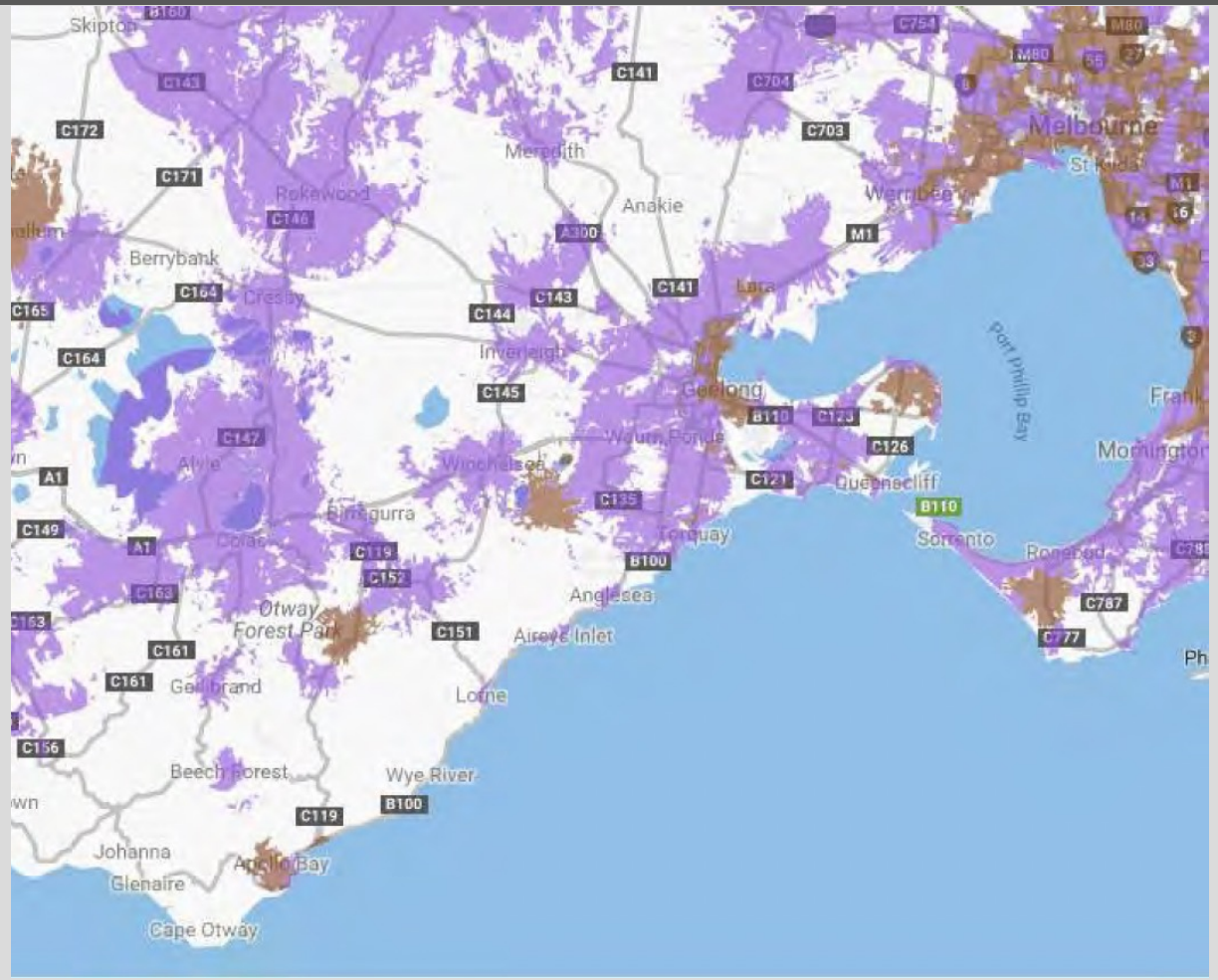
BUSINESS FIBRE ZONES (BFZ)
~97% of business premises in the cluster are covered by BFZ[1].

**Based on geographic area coverage maps (ACCC). Frequencies at 1.8GHz (lower mid band) and higher generally provide a rough proxy for at least 4G mobile broadband connectivity*

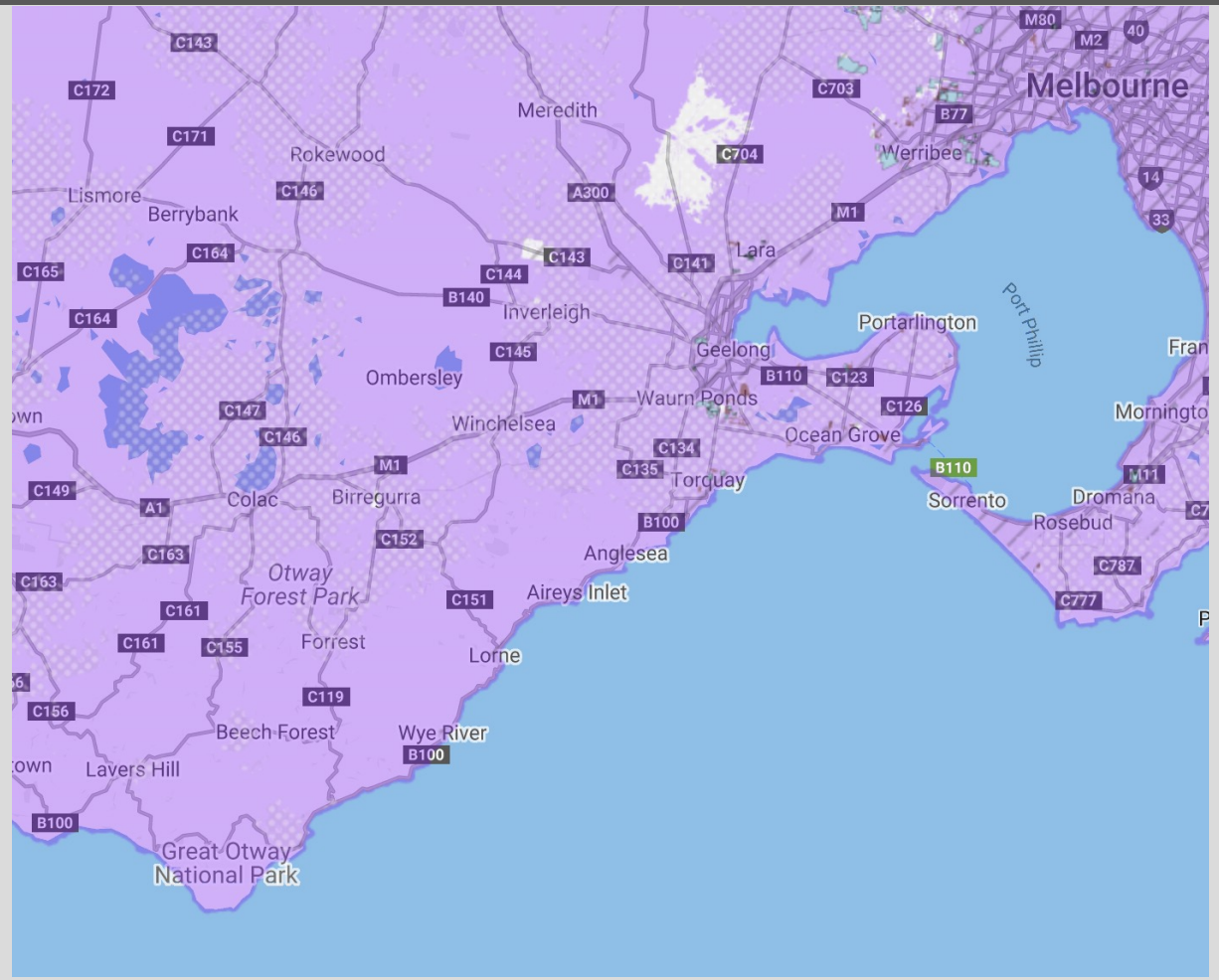
Service available area | Build commenced area | Other fibre provider area
Fixed line | Fixed wireless | Satellite

REGIONAL PARTNERSHIPS BARWON

VICTORIA State Government



NBN broadband coverage **2019**



NBN broadband coverage **2022**

nbn™

Service available area · Build commenced area · Other fibre provider area

Fixed line · Fixed wireless · Satellite

REGIONAL PARTNERSHIPS BARWON

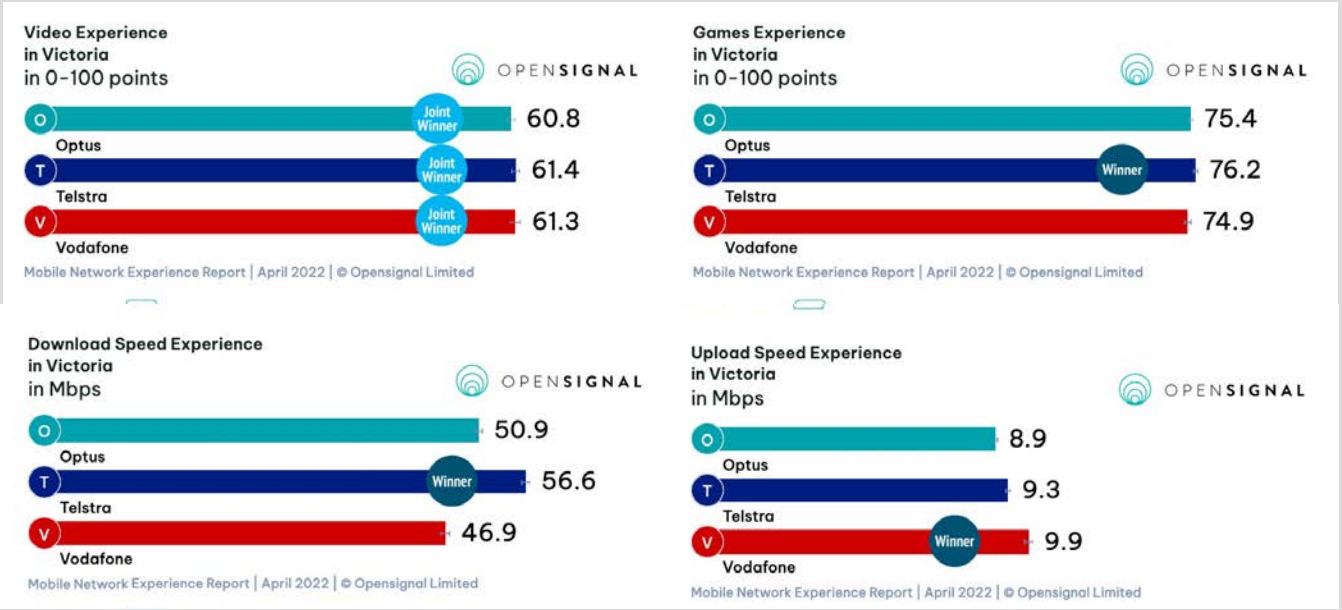
VICTORIA State Government

LGA	Name	User Type	Access			
			Fixed Supply / Demand	Mobile* Supply / Demand	LP-WAN IoT Supply / Demand	WiFi Supply / Demand
Geelong	Geelong (pop. 157,104)	Business	M/H	H/H	H/M	n.a.
		Home	H/H	H/H	H/L	H/L
		Community	n.a.	H/H	n.a.	H/L
Geelong	Ocean Grove / Barwon Heads (pop. 18,205)	Business	M/H	H/H	H/M	n.a.
		Home	H/H	H/H	H/L	M/L
		Community	n.a.	H/H	n.a.	M/L
Surf Coast	Torquay / Jan Juc (pop. 16,948)	Business	M/H	H/H	H/M	n.a.
		Home	H/H	H/H	H/L	M/L
		Community	n.a.	H/H	n.a.	M/L
Colac-Otway	Colac (pop. 11,891)	Business	M/H	H/H	H/M	n.a.
		Home	H/H	H/H	H/L	M/L
		Community	n.a.	H/H	n.a.	M/L

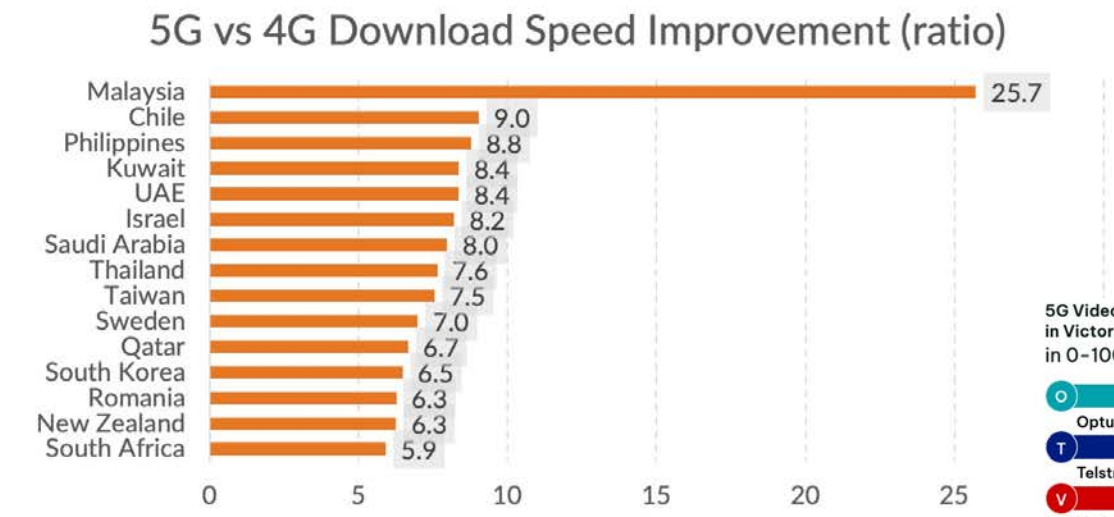
Unmet digital demand (in 2019)
Amber = Intermediate supply shortfall
Green = Supply meets or exceeds demand.
Light green = **Reservations, based on local mobile access experience,** about the good coverage indicated by public coverage maps.

Left: **Unmet digital demand – Digital Plan 2019**

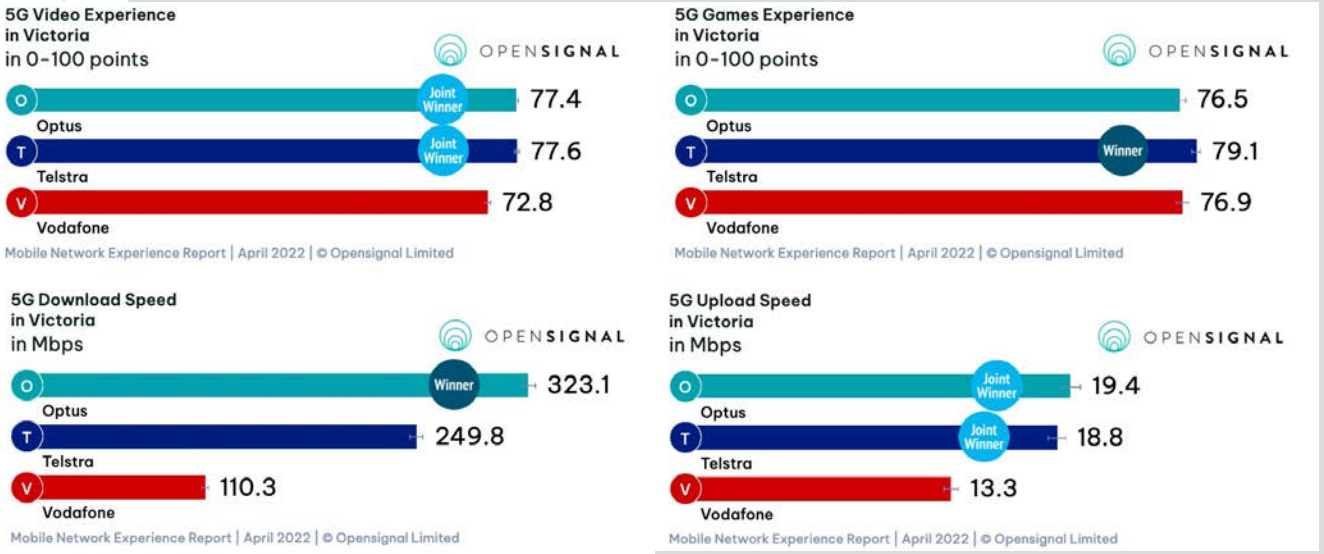
Below: **Regional Victoria overall mobile coverage – OpenSignal, April 2022**



5G Global Top 15: Uplift

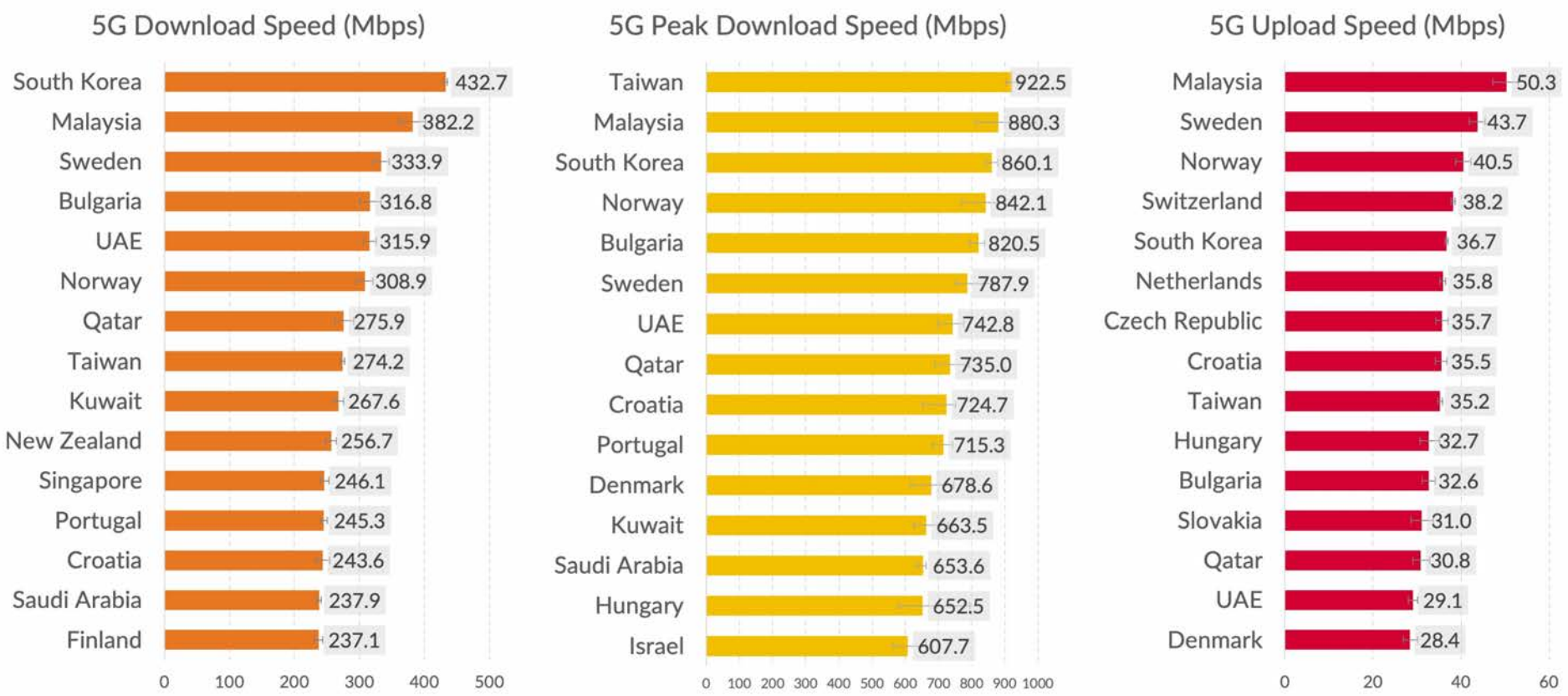


Below: **Regional Victoria 5G mobile coverage – OpenSignal, April 2022**



5G Global Top 15: Speed

OPENSIGNAL



Data collection period: 1 March 2022 – 29 May 2022 |

Other infrastructure and assets

VicTrack fibre transits the northern fringe of the city, following the route of the train line. Utilising spare capacity on this fibre could enable high-speed connectivity to Melbourne.

No details are available of optical fibre connectivity provided by other MNOs.

Extensive 220v power is available in Geelong and its surrounding suburbs.

- Digital Plan 2019

Private fibre

CCTV network

Smart Nodes

Low Orbit Satellite

IoT networks

Public Wifi

Data Analytics

Digital Twin

UAV / EV

AR

Digital maturity

Other

Business objectives, challenges & opportunities

INDUSTRY FOCUSED - ADVANCED MANUFACTURING

CONNECTIVITY SOLUTION	Fixed Broadband	Mobile	Narrowband / Low Power Wide Area Network (LPWAN)	Satellite Broadband
	Fibre to the factory	*4G/5G*	*NBIoT / Sigfox / LoRA*	*Low Earth Orbit (LEO)*
EXAMPLE USE CASES	• Video-operated remote processing • Augmented reality for maintenance • Time critical process control	• Remote control for machinery • Wide area shop floor capacity • 3D printing applications	• Smart devices (high density) • Sensors, precision manufacturing • Non-time critical automation	• Remote manufacturing (eg. Those near primary industries like dairy, wood) • Backhaul for remote locations
EXAMPLE MANUFACTURING TYPES	• Defense Manufacturing • Medical equipment and pharmaceuticals • Automotive	• Food Processing • Consumer products manufacturing • Dairy and meat processing	• Petrochemical Refining (incl storage silos) • Consumer products manufacturing • Milling	• On Farm dairy processing • Forestry on site operations
KEY LIMITATIONS	• Very high cost for remote areas • Wi-Fi expansion/mesh network may be needed for vast shop floors	• Indoor terminals required for good signal • Peak hour congestion risk	• Very low bandwidth	• Compatible device ecosystem lacking, including hardware and terminals

INITIAL BUILD COST
 	
(Indicative only)
	• Up to $/millions per site depending on distance from point of interconnect, terrain conditions	• **Average costs**[1,2]
		  • **$760,000** per macro cell tower *(4 – 10 + km radius)*
		  • **$80,000** per small cell site *(1 – 4 + km radius)*
		• Can vary significantly *(e.g. Depending on backhaul choices and terrain)*
			• **Average ~$10,000** per base station[3]
			• Cost can be much higher depending on backhaul availability and site location
			• ~10km radius per station[1]
				• **~$1k** per receiver terminal *(Starlink[4])* + mesh network costs
				• Additional costs for commercial grade backhaul terminals (TBC)

1. Based on figures sourced from DJPR, includes backhaul
2. Depends on multiple factors including topography, spectrum band used, and RAN configuration
3. Based on GSC-IoT regional Coverage (V3) options analysis – Venture Insights. Includes gateway and CAPEX but excludes backhaul
4. Canstar Blue, https://www.canstarblue.com.au/internet/starlink-australian-speeds-update/

Infrastructure
Suitability
Accessibility
Affordability
Capability
Reliability
Appetite
Other?

Agenda – Advanced Manufacturing

One of five online workshops investigating the digital priorities of strategically important economic sectors and locations in the Barwon Region

9am *(5 mins)*	**Welcome & introductions** • Acknowledgements, overview of agenda and session format.	LB
9.05am *(5 mins)*	**Context & methodology** • Role and composition of Barwon Regional Partnership. • Overview of Barwon region's challenges and opportunities. • Digital Discovery Project objectives and methodology.	LB
9.10am *(15 mins)*	**Review available and planned infrastructure** and on-the-ground experience in specified location/s • Validate (or not) the accuracy of publicly available information against user experience and knowledge for specified locations. • Identify any significant omissions or errors in publicly available data.	LB
9.25am *(10 mins)*	**Confirm business objectives, challenges and opportunities of workshop participants** • What are the problem/s to be solved? • Will current and planned digital infrastructure address those business needs?	PA
9.35am *(15 mins)*	**Alternative/complementary technologies, assets and activities** • How might we address business needs in the short term and leverage potential for adaptive reuse in the longer term? • Might potential solutions offer any additional economic, environmental or social benefits in the lead-up to the Commonwealth Games? • How might we reduce implementation costs and increase affordable access for all?	PA
9.50am *(10 mins)*	What is the recommended **digital capability investment priority** for this sector and location?	PA
10am	Close & Next steps	LB

Output – Advanced Manufacturing

One of five online workshops investigating the digital priorities of strategically important economic sectors and locations in the Barwon Region

Participant comments and observations – Advanced Manufacturing

Leanne Nelson
In addition to Central and North Geelong, Advanced Manufacturing hubs exist in Moolap and Avalon.

Kevin Foard
Deakin University uses a diverse 74 core dark fibre network, sometimes in partnership with CoGG. The network is currently underutilised.
Co-building 72 core dark fibre network with CoGG to Queenscliff and Bellarine Rail Trail.
Collaboration & cooperation required to access dark fibre network.

Peter Meikle
2 types of customer (Domestic services – NBN) and Advanced needs (telemetry data, instrumentation, moving data for collaboration and analysis) for which Waterfront/Waurn Ponds campus (30GB/sec) access is required.

Russell Varley
According to the Geelong Manufacturing Council, transition from manufacturing to advanced manufacturing (Industry 4.0) is still underway.
Awareness, knowledge, skills and access remain barriers to transition from traditional manufacutring.

Matthew Collins
NBN enterprise uptake "not great" amongst GMC members. Confidence, trust and value are compromised by slow and inconsistent service.
Hanwah Defence at Avalon plan to act as a prime integrator/assembler of locally produced components, to deliver contracted defence vehicles.
They are developing digital relationships for prototyping and to connect with local suppliers.
Deakin Uni is well-equipped digitally (own infrastructure) and does not have any immediate requirements for infrastructure.
Avalon Airport wish to develop an e-commerce precinct (robotics, advanced manufacturing, ???) leveraging TPG-NBN fibre that runs past the site.
Demand for high-capacity digital infrastructure is currently **low** amongst Geelong Manufacturing Council (GMC) members.
GMC plays a coordination role for collaboration opportunities.
5G rollout in advanced manufacturing zones will assist and assure data transfer and connectivity as a secondary or tertiary channel.
5G will be critical to the development of the education sector. (Matt)??
5G is required for offshore high-capacity digital requirements, such as boats collecting real-time telemetry data; and in areas without reliable fibre connectivity including the Otways.
Deakin research assets tailored for the ADF include test track and firing range, data performance, weapons (from Israel and elsewhere) – "other big companies will join us"

Craig Warren
Localised data centres being discussed/negotiated between various Barwon entities (Deakin, SWARH, CoGG, GMC) and numerous providers (Leading Edge/AWS/Google/Microsoft).
Concerns about footprint of data centres in central Geelong. Deakin Uni has space at Waurn Ponds with connectivity to alternative power).
Hanwah running entrepreneur program to lift digital maturity of local supply chain.

Potential actions - Advanced Manufacturing

1. Make better use of existing public and private assets – coordination role is a gap.
2. Create precincts for advanced manufacturers (start-ups don't want to be bothered with connectivity issues).
3. Increase appetite for digital infrastructure and knowledge – "Massive infrastructure investment won't drive transformation if manufacturers can't see business benefits." (GMC)
4. Leverage Geelong's location to Melbourne, availability of skilled workers who are Australian citizens (defence requirement), education and training assets (Deakin Uni & Gordon TAFE), Avalon Airport and Geelong Port, to attract more globally significant advanced manufacturers