

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.



Agenda – Digital Skills and Co-working Capability

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 <ul style="list-style-type: none"> Acknowledgements, overview of agenda and session format. 	LB
9.05am (5 mins)	Context & methodology <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 – Digital Skills and Co-working Capability

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

	Infrastructure	Business objectives	Complementary technologies	Cost and Access	Recommendation
Session Participants	<ul style="list-style-type: none"> • Validate accuracy of info • List omissions or errors 	<ul style="list-style-type: none"> • Problem/s to be solved • Is the proposed solution correct 	<ul style="list-style-type: none"> • Tech opportunities • New economic, environmental or social benefits 	<ul style="list-style-type: none"> • List funding/partnership opportunities 	<ul style="list-style-type: none"> • Digital capability investment priority for this sector/location?
David Spear					
Dr. Gjoko Muratovski					
Andrew Hamilton					
Dr. Adam Mowlam					
Giulia Baggio					
Matty Lawrence					
Martin Dodrell					



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 Queenscliff**

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



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



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



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



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



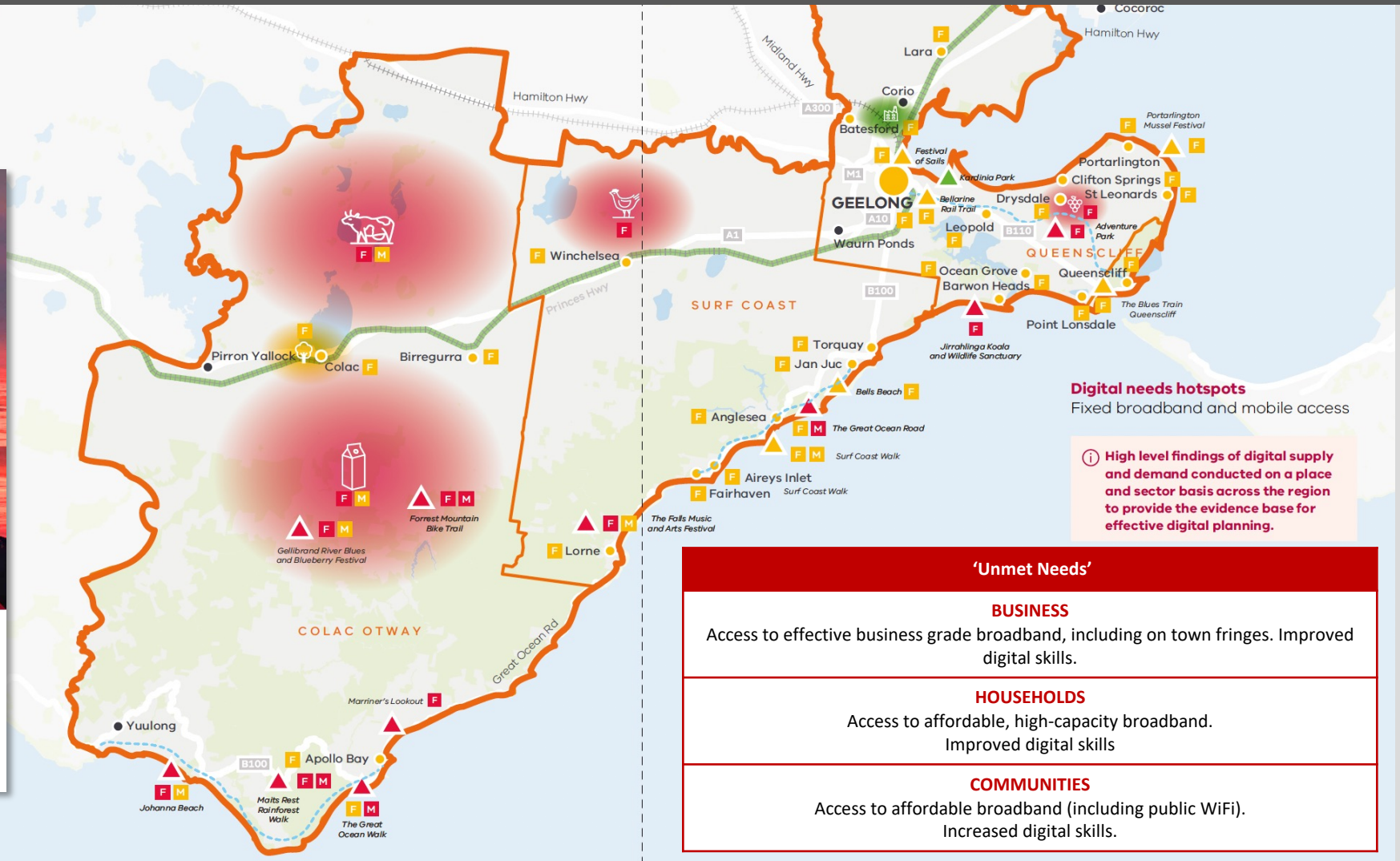
2022



2019



Barwon Regional Digital Plan



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)

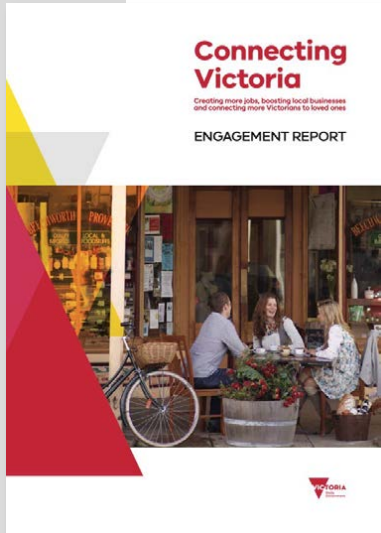
2019







Barwon Regional Digital Plan





Key themes from community consultation in *Connecting Victoria*



 Economic uplift	 Working and learning from home	 Safety	 Social Inclusion	 Telehealth	 Service Quality
<p>Businesses that don't have high-speed internet told us they are missing out on economic growth opportunities.</p> <p>Residents told us that bad connectivity, reliability and ongoing outages make it difficult to perform remote work, study online and socialise through the internet.</p> <p>Poor connectivity is a big deterrent for regional migration.</p>	<p>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.</p> <p>Mobile and broadband speeds have suffered, with bottlenecks and outages, making it difficult for households where people are working or learning from home.</p>	<p>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.</p> <p>During emergencies, better mobile and broadband coverage is needed so that community members can receive emergency messages and ask for help in real time.</p>	<p>Respondents told us the COVID-19 pandemic has made Australians even more dependent on digital technology – in our economy, everyday lives and jobs.</p> <p>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.</p>	<p>Victorians told us that attending health appointments in person is challenging for many people who live in regional, rural and remote areas.</p> <p>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.</p>	<p>People we consulted with said that broadband and mobile connectivity services in many places across the state are still not good enough.</p> <p>While some infrastructure has been upgraded, residents are still waiting months to be connected. They reported that connectivity issues happen with all service providers.</p> <p>We heard that long outages are common, and some areas are using old technology with no defined plans for improvement.</p>

THE VISITOR ECONOMY	AGRICULTURE TECHNOLOGY	BUSINESS OPPORTUNITIES	GROWTH AREAS
<p>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.</p> <p>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.</p>	<p>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.</p> <p>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.</p>	<p>Participants reported that limited mobile and broadband connectivity is negatively affecting businesses in some areas.</p> <p>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.</p>	<p>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.</p> <p>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.</p>



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 2021⁶

(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 FTTP 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

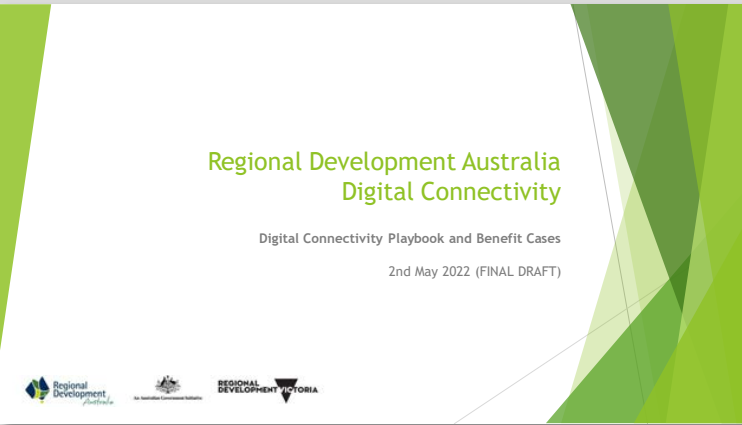


Barwon Regional Economic Development Strategy (REDS)

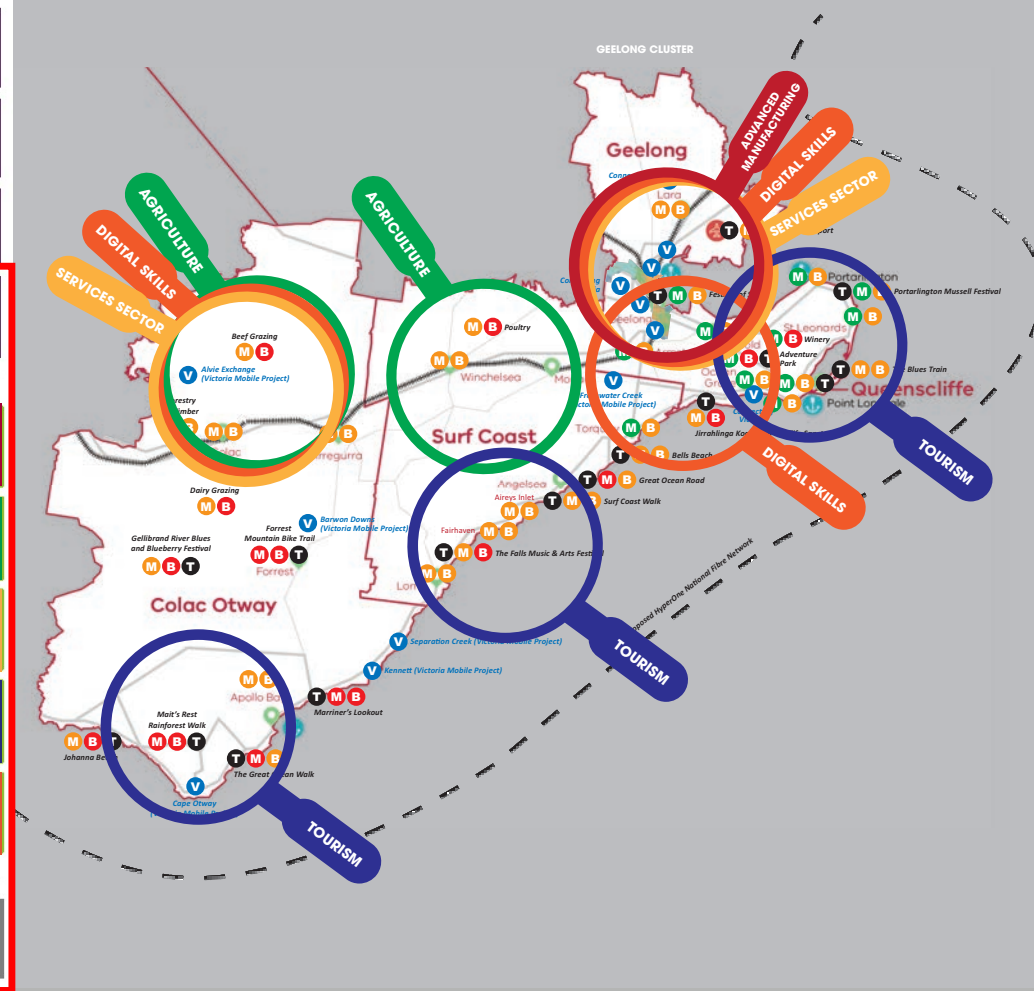
STRATEGIC DIRECTIONS

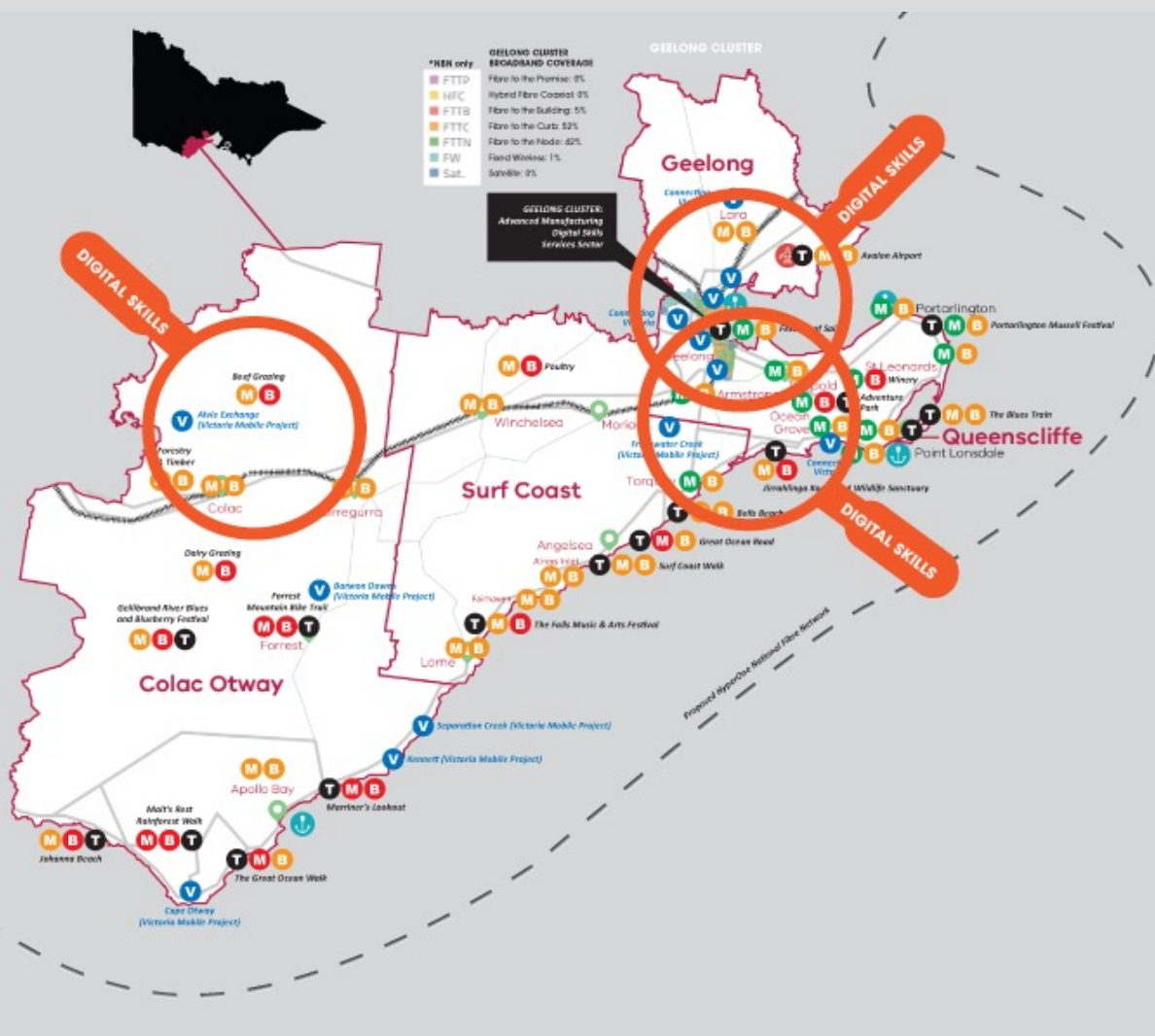
- Accelerate the transition to new and high-value manufacturing opportunities**
 Developing future-focused products and advanced manufacturing capabilities will, along with existing supply chains and transport infrastructure, drive new and high-value manufacturing opportunities.
- Further the innovation 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:

Digital skills & Co-working capability

WHERE:

Geelong Cluster
(Geelong & North Geelong)

Residential / Work-from-home Growth Areas
(Surf Coast, Bellarine, Armstrong Creek)

Colac region

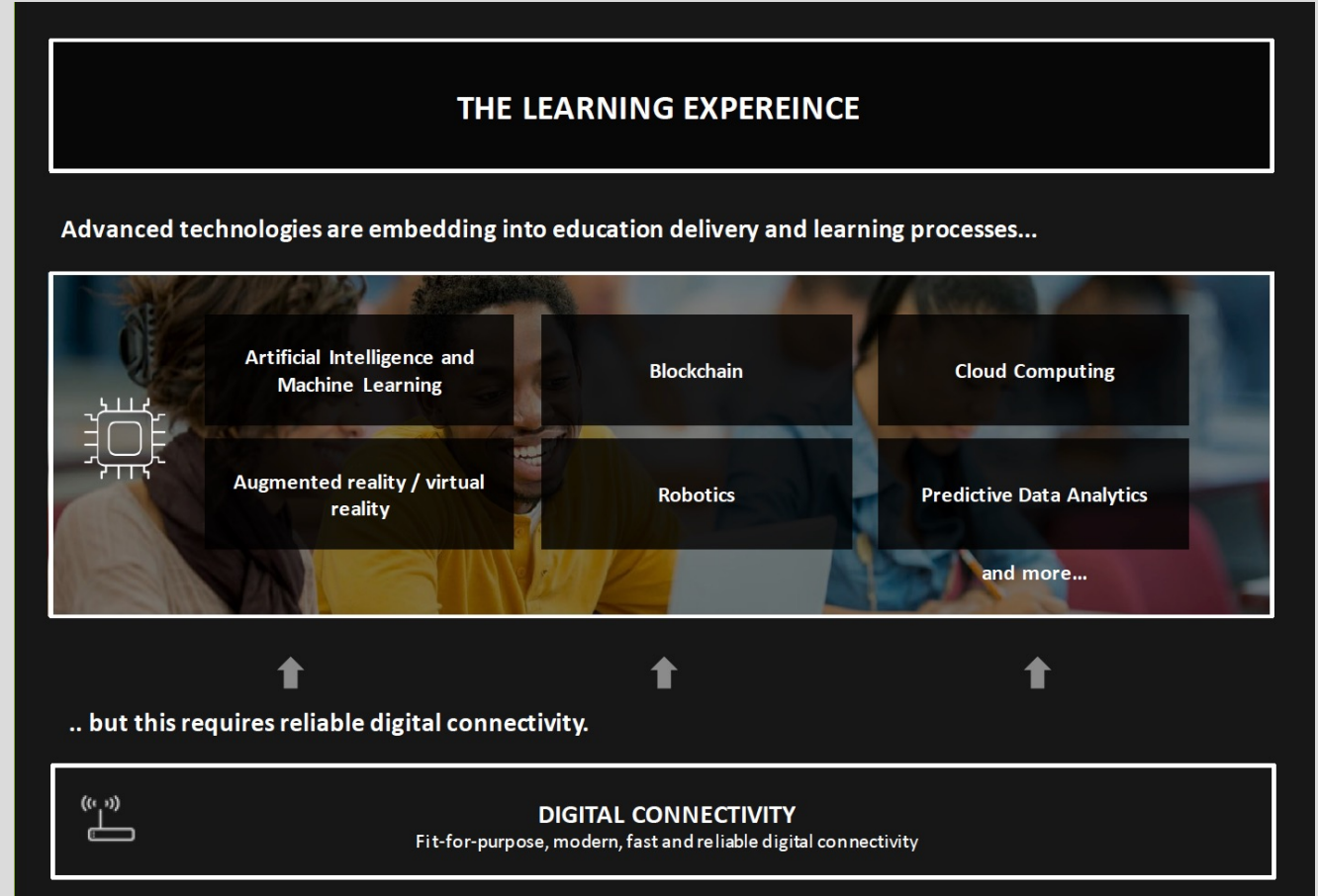
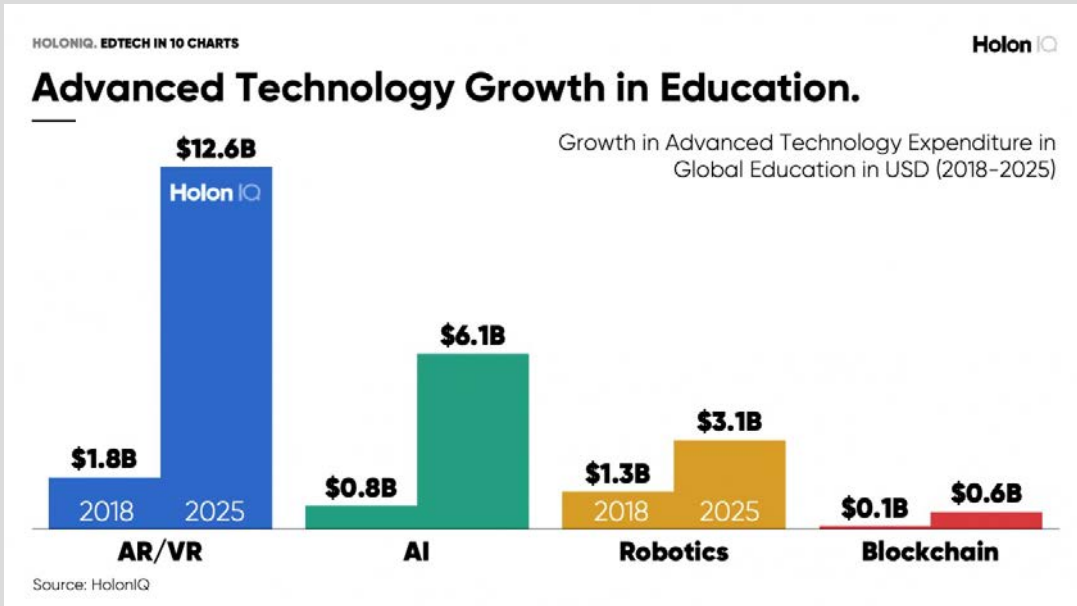
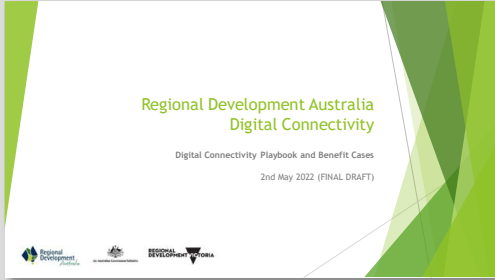
HOW:

Infrastructure

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

Access & Affordability

Capability



[ABS Definition: 'Tertiary Education' and 'Adult, Community & Other Education']

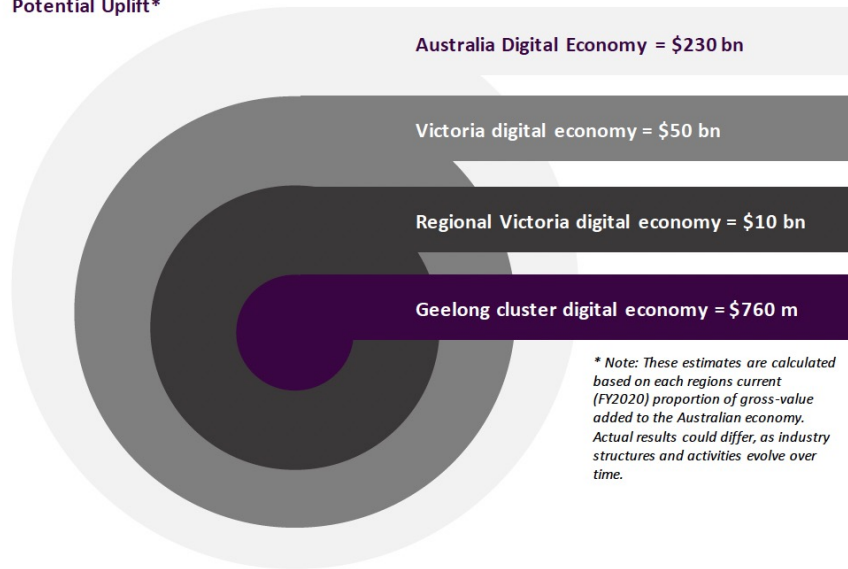


PwC insights indicate that enhancing connectivity across the Geelong cluster has the potential to unlock a \$760m+ economic uplift through participation in the digital economy

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 region's 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

Direct economic uplift of digital connectivity to FTTP



Unlocked by

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

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

\$ GVA \$20 m

Key industry beneficiaries in the potential GVA uplift:



Health Care and Social Assistance
\$3.4m



Public Administration and Safety
\$2.2m



Financial And Insurance Services
\$2.0m



Education and Training
\$2.0m

Economic Uplift from connectivity:

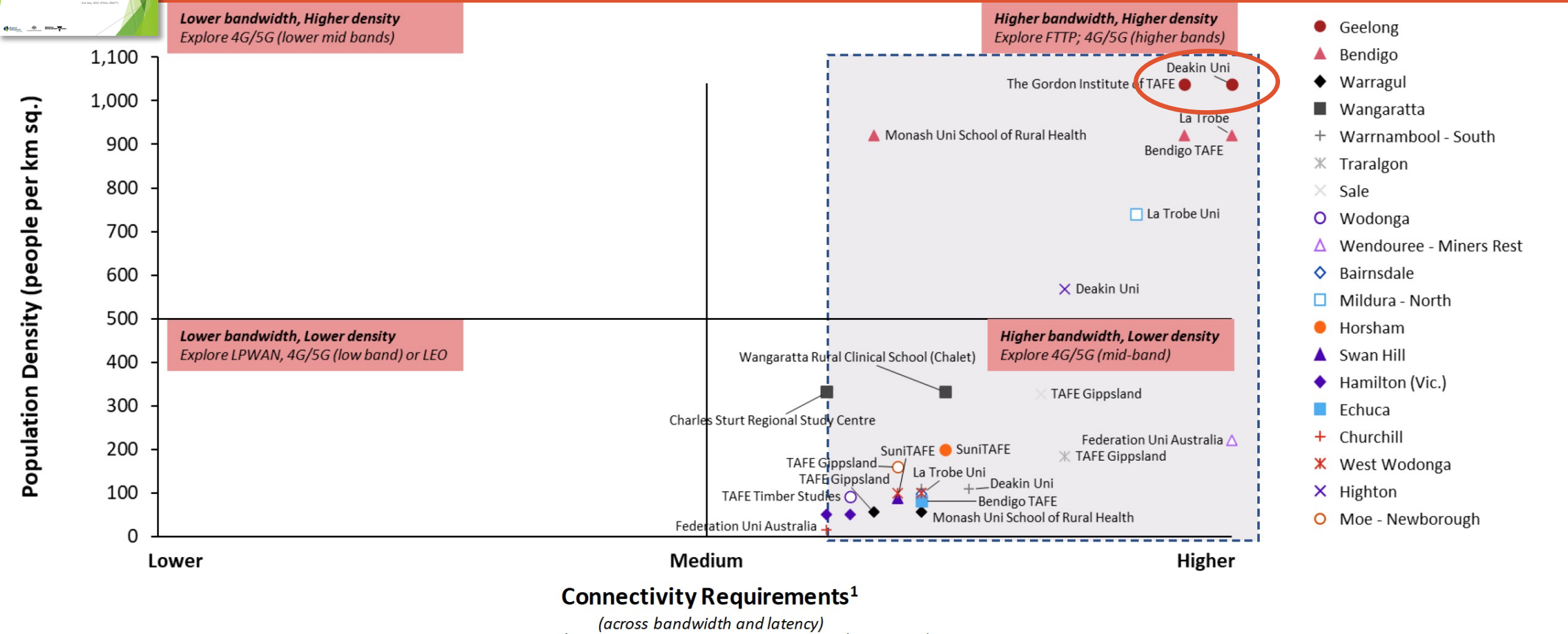
Economic uplift potential indicates the cumulative benefit from transitioning from current broadband fibre connectivity, to FTTP fibre connectivity over five years (2022-2026). This represents the incremental benefit of enabling this technology over the current fibre coverage level. It is important to 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)

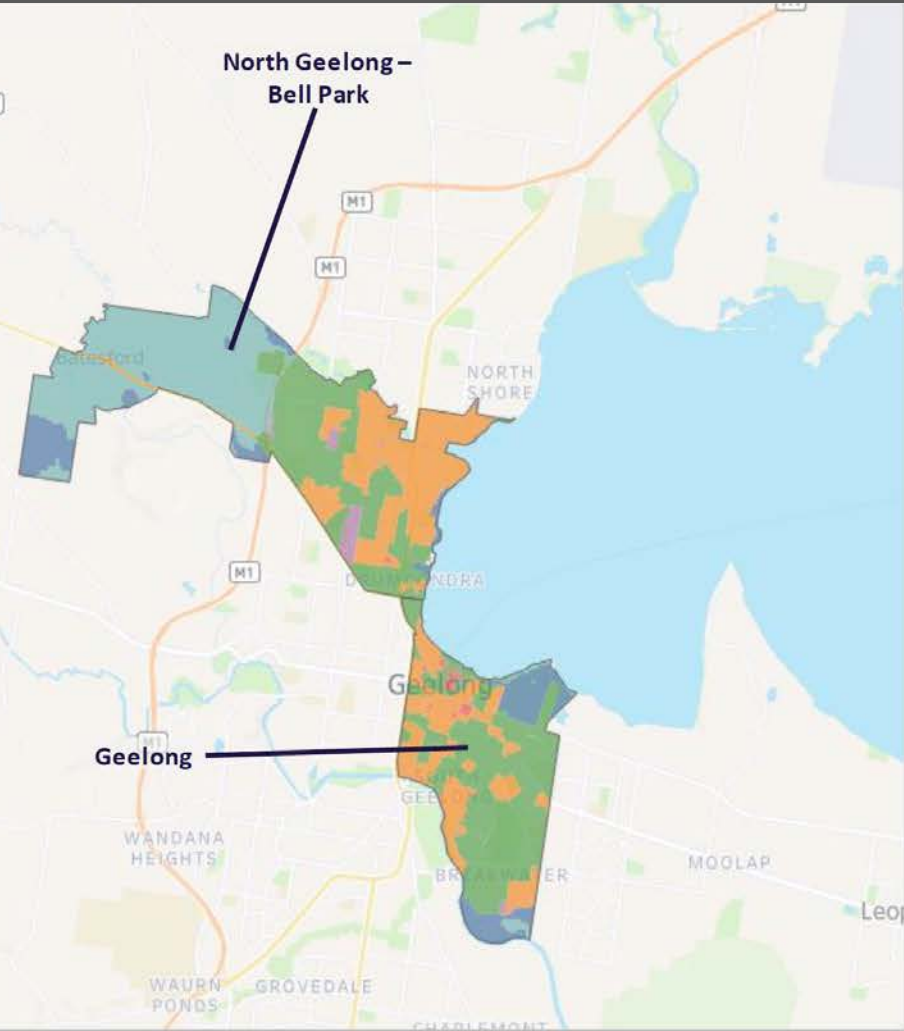
FTTP is considered the ideal state for fixed broadband* and therefore this economic uplift potential represents the maximum potential uplift. This is *not* a technology solution recommendation. The actual economic uplift will differ based on the technology solution that is considered fit for purpose.

*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.

Digital Skills & Co-working Capability



- Geelong
- ▲ Bendigo
- ◆ Warragul
- Wangaratta
- + Warrnambool - South
- × Traralgon
- × Sale
- Wodonga
- △ Wendouree - Miners Rest
- ◇ Bairnsdale
- Mildura - North
- Horsham
- ▲ Swan Hill
- ◆ Hamilton (Vic.)
- Echuca
- + Churchill
- × West Wodonga
- × Highton
- Moe - Newborough



- FFTP
- HFC
- FTTB
- FTTC
- FTTN
- FW
- Sat.

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%

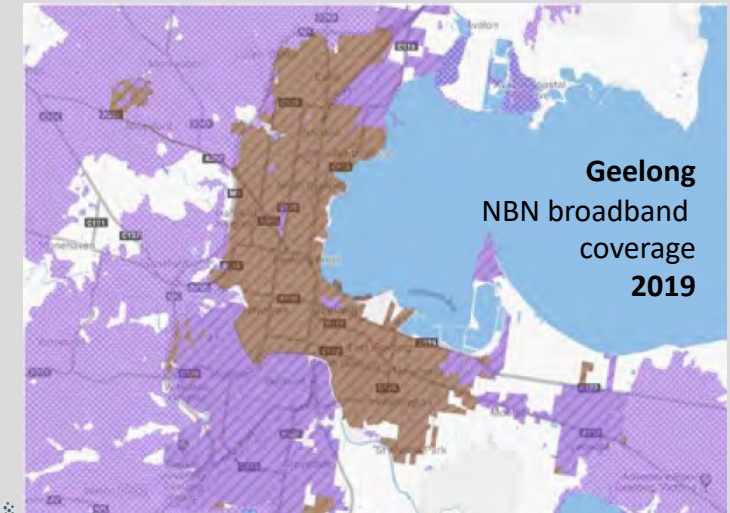
MOBILE*
100% of the cluster (~35 Sq Km) has mobile coverage at spectrum frequencies ≥1.8 GHz *

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 BFZ¹.

**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*

Source: ACCC

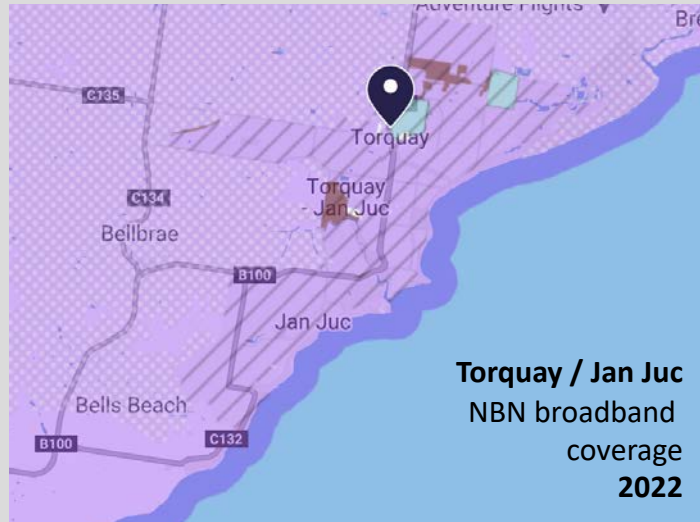
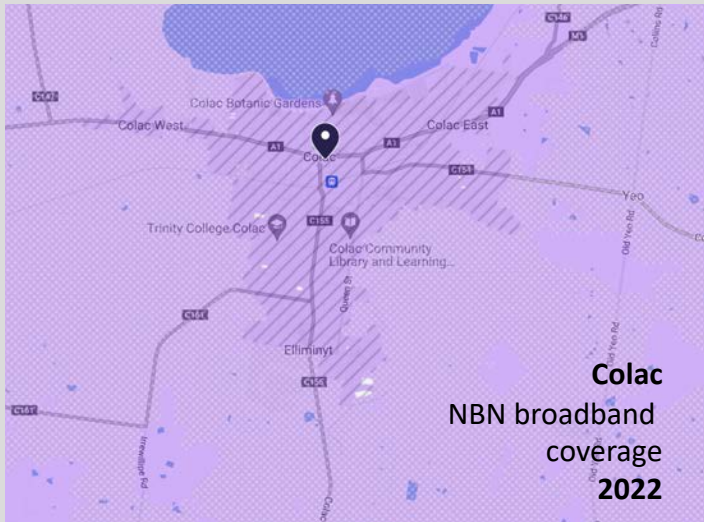
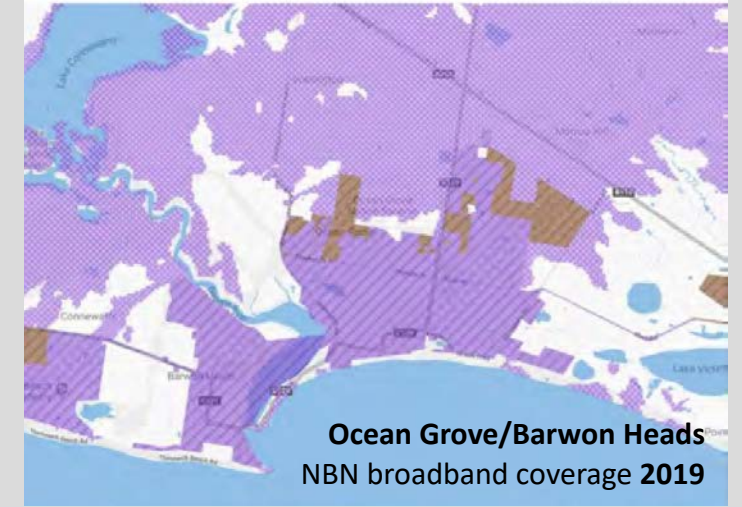
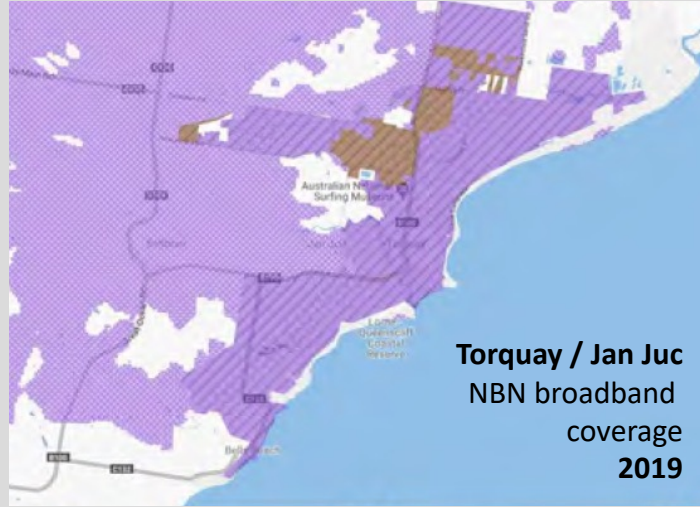
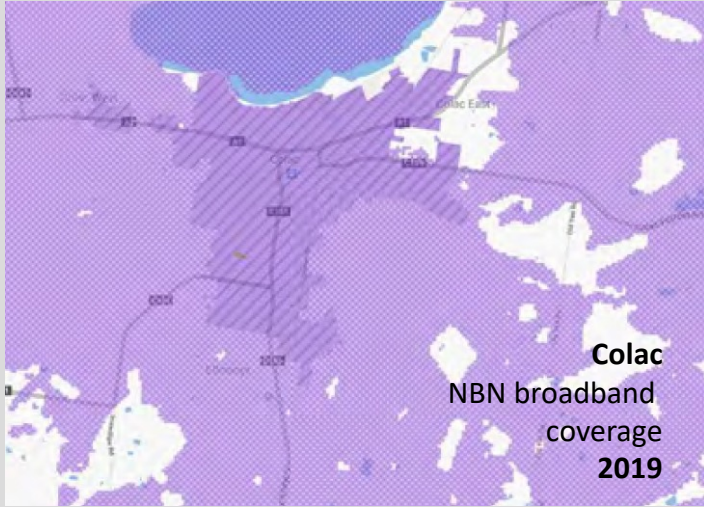


Geelong NBN broadband coverage 2019



Geelong NBN broadband coverage 2022

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



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

Left: Unmet digital demand – Digital Plan 2019

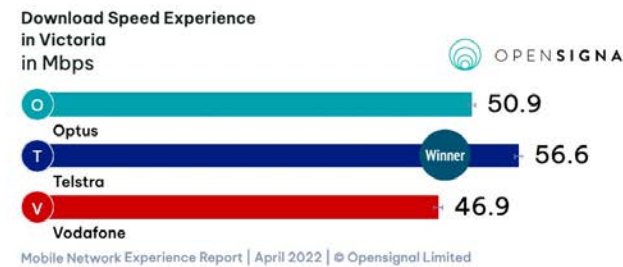
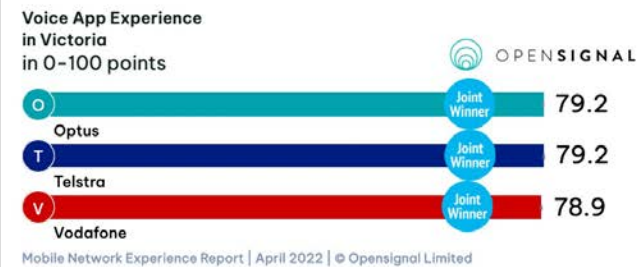
Unmet digital demand (in 2019)

Amber = Intermediate supply shortfall

Green = Supply meets or exceeds demand.

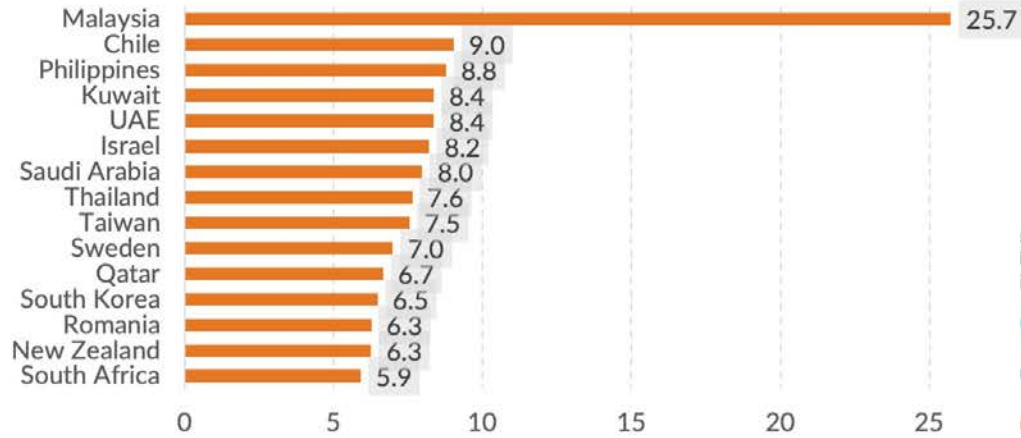
Light green = **Reservations, based on local mobile access experience, about the good coverage indicated by public coverage maps.**

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



5G Global Top 15: Uplift

5G vs 4G Download Speed Improvement (ratio)



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

5G Video Experience in Victoria in 0-100 points



Mobile Network Experience Report | April 2022 | © Opensignal Limited

5G Games Experience in Victoria in 0-100 points



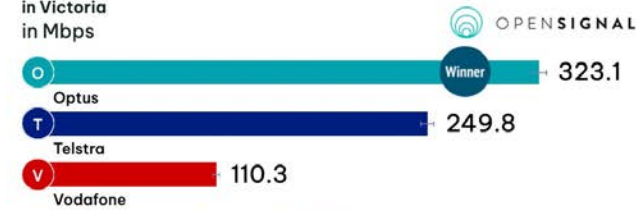
Mobile Network Experience Report | April 2022 | © Opensignal Limited

5G Voice App Experience in Victoria in 0-100 points



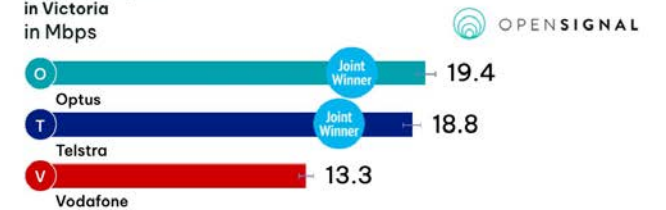
Mobile Network Experience Report | April 2022 | © Opensignal Limited

5G Download Speed in Victoria in Mbps



Mobile Network Experience Report | April 2022 | © Opensignal Limited

5G Upload Speed in Victoria in Mbps



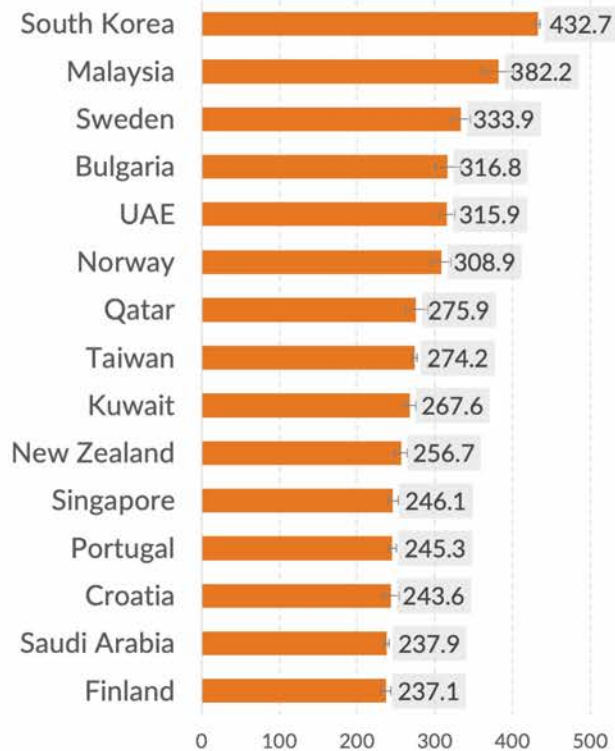
Mobile Network Experience Report | April 2022 | © Opensignal Limited



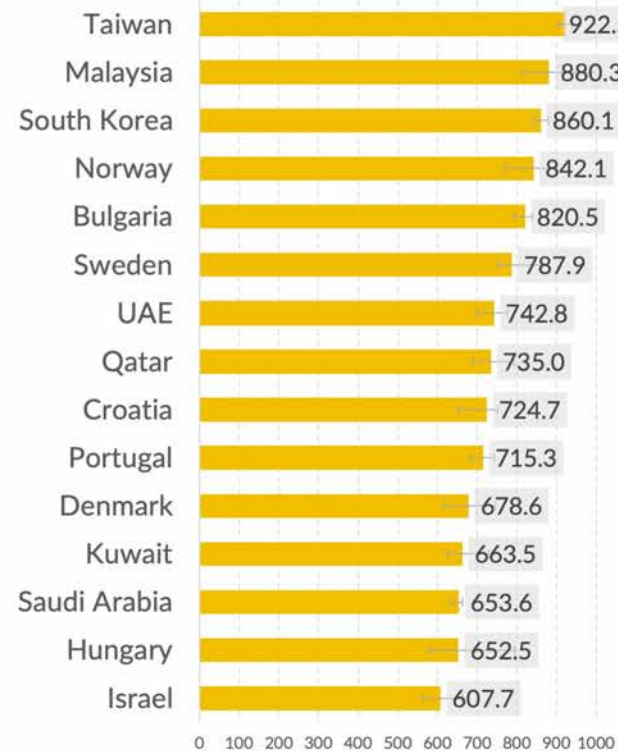
5G Global Top 15: Speed



5G Download Speed (Mbps)



5G Peak Download Speed (Mbps)



5G Upload Speed (Mbps)



Data collection period: 1 March 2022 – 29 May 2022 | © Opensignal Limited

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

KEY	CITY-WIDE INITIATIVE
Free Public WiFi	3D Digital Twin
CCTV network	Geelong Data Exchange
Smart lighting	Geelong City Deal
Customer Experience & Digital Modernisation Program	UAV trials
AR Bollards	Clean tech
IoT (Internet of Things)	
Smart nodes	

- Private fibre
- CCTV network
- Smart Nodes
- Low Orbit Satellite
- IoT networks
- Public Wifi
- Data Analytics
- Digital Twin
- UAV / EV
- AR
- Digital maturity
- Other

fresh approach



fruitful outcomes





fruitful
COMMUNICATIONS

Part of **The Digital Divide** group

Barwon Regional Partnership – Digital Discovery Project

Business objectives, challenges & opportunities

Connectivity solution for education and training, and associated build cost, depends on the type of digital applications required

CONNECTIVITY SOLUTION	 Fixed Broadband	 Mobile	 Narrowband / Low Power Wide Area Network (LPWAN)	 Satellite Broadband
	Fibre to the School/Classroom	4G/5G	NB-IoT / Sigfox / LoRA	Low Earth Orbit (LEO)
EXAMPLE USE CASES	<ul style="list-style-type: none"> VR/AR enhanced education UHD Live Video streaming Campus Security 	<ul style="list-style-type: none"> Remote Learning (online modules) HD Live Video Streaming Campus Security 	<ul style="list-style-type: none"> Smart Classrooms Automated Attendance Tracking Campus Security 	<ul style="list-style-type: none"> Remote Learning
EXAMPLE EDUCATION TYPES	<ul style="list-style-type: none"> Virtual medical/geological learning AI/VR/AR learning and labs Cloud based Robotics 	<ul style="list-style-type: none"> Remote site learning (e.g. Agriculture/Geology) Cloud based Robotics 	<ul style="list-style-type: none"> Research programs enhanced with automated systems in major areas of study, such as medicine, agriculture and engineering. 	<ul style="list-style-type: none"> Remote area education (e.g. in home)
KEY LIMITATIONS	<ul style="list-style-type: none"> Very high cost for remote areas Wi-Fi expansion/mesh network may be needed for wider area coverage 	<ul style="list-style-type: none"> Indoor terminals required for good signal Bandwidth limitations for UHD video 	<ul style="list-style-type: none"> Very low bandwidth 	<ul style="list-style-type: none"> Compatible device ecosystem lacking, including hardware and terminals
INITIAL BUILD COST (Indicative only)	<ul style="list-style-type: none"> Up to \$/millions per site depending on distance from point of interconnect, terrain conditions 	<ul style="list-style-type: none"> 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) 	<ul style="list-style-type: none"> Average ~\$10,000 per base station³ Cost can be much higher depending on backhaul availability and site location ~10km radius per station¹ 	<ul style="list-style-type: none"> ~\$1k per receiver terminal (Starlink⁴) + 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?

Output – Digital Skills and Co-working Capability

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

Dr. Gjoko Muratovski

Andrew Hamilton

Dr. Adam Mowlam

Kate

Tom

Martin Dodrell

Participant comments and observations – Digital Skills & Co-working Capability

Lack of clarity about the types of digital skills and knowledge required for areas of strategic economic importance to the region.

Power network stability and digital reliability issues are impacting digital business and skills retention.

Reliable digital connectivity is a motivating factor to attract and retain recent worker migration from Melbourne to growing local opportunities in education and healthcare

Council business efficiency is negatively affected by inconsistent digital experiences for staff and customers

Access to motivation/inspiration/education - Digital divide

Position as leader - during Commonwealth Games connectivity, customer experience, broadcast capability

Opportunity to educate industry areas to better understand how digital engagement and activity can help attract and retain youth in the region.

Opportunity to coordinate and improve utilisation of digital assets to establish the Barwon region as a digital skills exemplar

Opportunity to realise benefits of establishing co-working spaces in underutilised government assets

Unreliable connectivity in high growth areas is a barrier to working regionally

Flexible solutions are required for regional workforces.

Focused, mature digital skills environment will attract and retain S/M/L businesses

Digital connectivity in rural and remote areas is affecting youth retention / migration attraction / retention and expectation (Netflix, socials, work from home)

From Gjoko Muratovski : Digital infrastructure would help digital companies to consider setting up offices in the regions.

From Adam Mowlam : Tier IV data center to attract big tech company and future proof city

From Peter : Is there an opportunity to create a "AARNET" style collaboration group for the Barwon Region?

From Andrew : Strong and reliable business digital connectivity to give confidence to local business to upskill and compete nationally and new businesses to set up in the region.

From Peter : What are the services new businesses need to setup and scale (Gjoko)

From Peter : On the back of the Comm games, how to be show an area of digital leadership - be amazing at something - (Andrew)

From Peter : Ensure there is a base level of service for all. (Kate)

From Peter : Leverage the proximity to Melbourne, Subsea cable, Data Centre, create the continued investments into the region. (Adam)

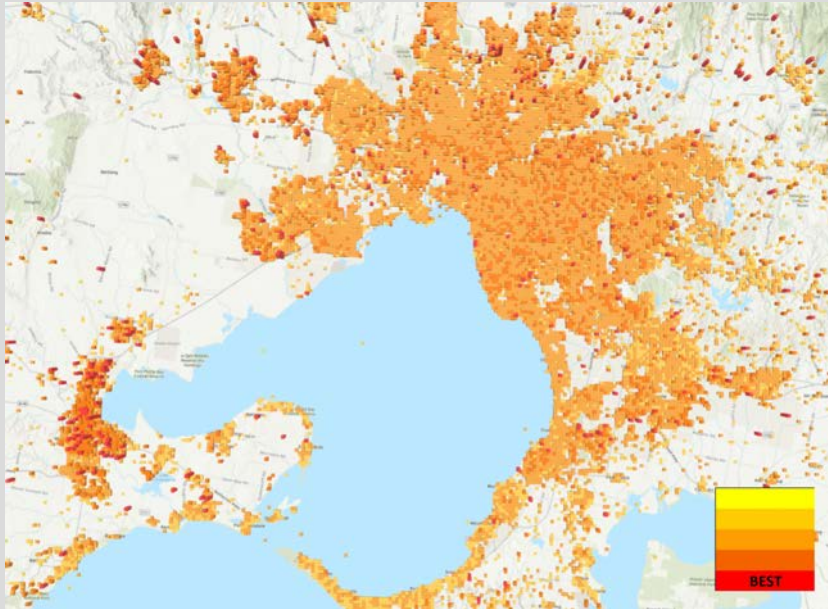
From KateCoghlan : Priorities from G21's perspective: set 2026 Commonwealth Games as a goal to get speeds up to metropolitan Melbourne, particularly in peak periods. We need to Improve speeds and bandwidth for public schools (and community services) who can't access AARNet, address peak demand impacts on tourism and emergency services along the coast and hinterland, look at needs of advanced manufacturing, future industries which will be increasingly reliant on high speed broadband.

Potential actions – Digital Skills & Co-working Capability

1. Education program to increase awareness of how digital activity will shape the future of sectors of strategic economic importance to the region.
2. Audit of current and potential co-working locations and capabilities
3. Establish network of digitally-enabled co-working spaces across the region using a mix of public and private infrastructure.

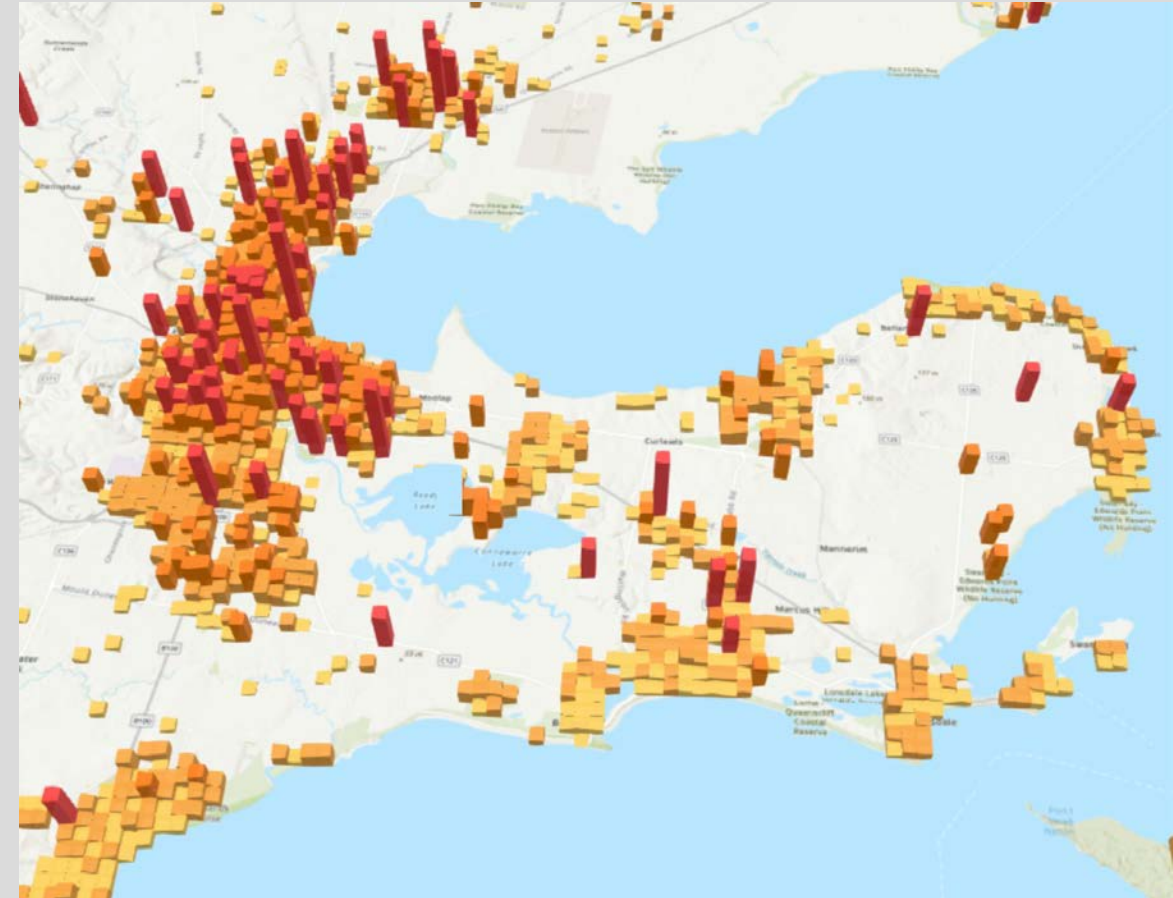


"Internet speeds" – City of Greater Geelong



Relatively speaking, internet speed is not that BIG of a problem for Geelong. Certainly internet access is problematic in coastal areas, especially with WFH and the shift of white collar workers. There are Aarnet expansion plans for the region which will help – but its really targeted at connecting community facilities and Deakin. (Adam Mowlam)

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





Digital Priority – G21 Geelong Region Alliance

[Note digital skills gap info and assess G21 needs list
– plus check any published council priorities at CoGG, Surf Coast, Queenscliff, Colac]

VICTORIA 2026 COMMONWEALTH GAMES - CALL FOR IDEAS:

5. DIGITAL CONNECTIVITY

Digital connectivity is extremely patchy across the region, including the train ride from Melbourne to Geelong. This has a range of detrimental impacts on business, tourism, education, emergency management and service delivery. It is well established that unreliable coverage is exacerbated by the annual influx of summer tourists to the region. The lack of connectivity would not be acceptable for thousands of tourists visiting the region during the Games or for Australian and international media organisations trying to provide TV, radio and online coverage.

Millions around the world watched the Birmingham opening ceremony on their smart phones, tablets and TVs and more than a billion people tuned in to see 5000 athletes from 72 countries competing in 19 sports and eight parasports. Geelong must digitally ready to provide equal if not better coverage. (The new Geelong Convention Centre will require excellent digital capability, ongoing. Exhibitions such as LUME at MCEC, or productions such as Dorian Gray would not be possible in current conditions, for example.)

The Games should act a final deadline for state and federal government programs to speed up digital network investment to bring the G21 region up to modern, metropolitan standards.

REGIONAL DIGITAL CONNECTIVITY AND UPSKILLING

Access to high speed, affordable digital communications is a fundamental part of daily life and a lifeline for many grappling with the impact of COVID.

The lack of connectivity across G21 continues to disadvantage businesses, emergency and essential service providers, the elderly, migrant communities and school and tertiary students who do not have access to a reliable network. Existing connections are stretched beyond their limits by a growing population. Peak holiday season adds to intense demand.

The region's 40,000 primary and secondary students do not have consistent access to online learning which has become essential during COVID lockdowns. The region cannot afford to fall further behind. At present, one-in-three G21 students do not complete Year 12, compared to one-in-five in Melbourne.

Commonwealth and Victorian Governments recognise the gravity of the issue and G21 is grateful that both have founded funding programs to help address gaps, especially in communities such as Birregurra, Colac and Lara. Deakin University, AARNet and City of Greater Geelong have co-invested to extend fibre to parts of the Bellarine.

However, COVID has revealed the full extent of the digital divide and it is clear that deeper investment and coordination is needed to bring the whole region up to speed with modern metropolitan standards.

Digital Skills Gap

COVID has revealed a digital literacy and skills gap across the region. A significant number of businesses have struggled to grasp e-commerce opportunities. G21 municipalities report that older community members, young people and those experiencing disadvantage are

WHAT G21 NEEDS

MULTI-MILLION DOLLAR UPGRADE

REQUIRED FROM GOVERNMENT

- ▶ Greater co-investment and coordination needed from Commonwealth and Victorian Governments to deliver high bandwidth fibre and better mobile connection to G21; partnership with telcos
- ▶ Rapidly growing communities such as Armstrong Creek and Bannockburn should be prioritised, with funding from the Connecting Victoria program and the Commonwealth's Regional Connectivity Program
- ▶ \$250,000 to deliver a digital skills program for G21 business owners and staff, including digital assessments, training and skills development to support business recovery.
- ▶ \$250,000 for G21 libraries to develop and deliver:
 - a regional online training program for vulnerable communities.
 - a lending program to loan 4g enabled iPads to vulnerable communities (pilot of 30 iPads).
 - an outreach-focused resource to drive program development and partner liaison.

A commitment to embed GROW training, employment and procurement principles in all government projects within the region.