Digital Connectivity - Gaps and Priorities

Report on the Lived Experiences
of Communities, Businesses and Agencies
across East Gippsland

Report provided for the East Gippsland Shire Council
September 2021

Table of Contents

Executive Summary

This Report was designed and commissioned by the East Gippsland Shire Council to investigate the digital connectivity gaps and priorities that existed across East Gippsland, within communities, within the emergency services and within the business and tourism sector.

The premise on which this Report was developed was that the provision of efficient and effective digital connectivity in East Gippsland is critical to its social, economic, environmental and cultural future.

The Report finds that the existing level of digital inclusivity, defined as accessibility, affordability and digital activity indicates that not all community members, institutions and businesses are equally included, with the potential for creating digital division across the municipality.

Not all sections of the East Gippsland community are able to be included in the transactional opportunities that a digital world offers and, at an accelerating pace, demands. This is creating a division in the community that will only increase, as the digitalisation of information increases. It is not an acceptable outcome for East Gippsland to be in a position in which it develops second class digital citizens.

It also became apparent in the consultations that the issues and priorities were parts of a complex system of government agencies, wholesale and retail service providers, health, education and emergency agencies, business interests and the whole of the East Gippsland community.

Complex and dynamic systems are the most difficult to map, given the multiplicity of interdependent, determinant factors. In such a dynamic system there are barriers and enablers that change and influence other parts of the system, causing actions and reactions at all levels, from the individual and their community to that of government, service and emergency agencies and business.

In the following pages of this Report, Polis Planning has on behalf of the East Gippsland Shire Council, documented the many and varied experiences of a wide range of participants in this complex system of digital connectivity.

The speed by which digital communications is evolving will require both an agile and responsive strategy, to take full advantage of this dynamic environment and to have a suite of strategic directions that will ensure that the complexity of the technological changes and the service providers do not drive Council's responses and future work.

The complex system that we have alluded to above is dominated by large public/private entities and federal and state-based funding. Local government has very little opportunity or mandate to engage in the funding of telecommunications infrastructure, at scale, and we would argue that the Telecommunications Act does not provide a role for local government in funding the national communications infrastructure system. This is supported by advice from the Department of Infrastructure, Transport, Regional Development and Communications in its recent reply to this Report's request to understand the role of local government in telecommunications infrastructure.

> *Ultimately it is a matter for local governments to decide how and whether they would like to support an RCP (Regional Connectivity Program) application. Such support could include financial or an in-kind co-contribution, as well as a letter of support for the RCP applicant. By far the most significant financial co-contributors to RCP projects are the Australian, state and territory governments and the telecommunications providers themselves.*

Department of Infrastructure, Transport, Regional Development and Communications (2021)

The Report recommends, that Council focus on attracting external funding that provides low cost, local solutions that are designed specifically for individual communities across East Gippsland.

These solutions should be based on geographical location and service access, designed to enhance digital connectivity.

The processes for place-based improvements should occur incrementally and strategically.

This place-based strategy would complement any major infrastructure activities that are funded through State and Federal funding programs and those provided through NBN. It is our assessment that, given the cost benefit investment funding models that service providers currently use, they will not be able to provide universal, effective services across the municipality. The key word here is, effective. Although it is true that the majority of communities have access to some level of service, from satellite to fibre optics, 4G and 5G, our discussions with communities, businesses and agencies, highlighted the often ineffective and inconsistent reception of those services. As new service providers, with enhanced or new technology enter the market and provide competition to the existing

telecommunications sector, we expect that the community will be the beneficiaries in terms of accessibility, affordability and the scope for greater connectivity and digital capabilities.

There is still further work to be undertaken. Although the Report provides significant evidence and a set of prioritised actions, there still needs to be a greater understanding of the impact of being excluded or prejudiced in access to appropriate and effective technology and connectivity. This is especially true of people from Aboriginal and non-Aboriginal communities where some are affected by structural socio-economic disadvantage. The Report does, however, provide the fundamentals of a new **Digital Connectivity Strategy for the East Gippsland Shire Council.** It will clarify Council's role and build an understanding of the challenges and opportunities that lay ahead as we move further and further into an all embracing, digitally connected society.

There should be no 'winners and losers' as East Gippsland adapts to the new digital society.

polis
planning
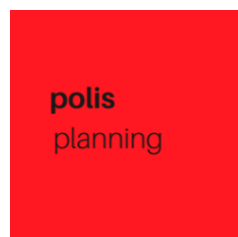
Summary of Key Issues

The following issues are further developed and identified within the body of the Report. However, it is useful to be able to see the scope of the issues at a glance.

A.	There needs to be increased connectivity access for rural and remote areas including more and better placed infrastructure;
B.	Telecommunications infrastructure needs to be better protected (hardened) against fire/storm damage;
C.	That in line with digital government communications practice it is critical for emergency services to have improved digital access to communities during emergency situations;
D.	That it is critical to public safety that communities have improved digital access to emergency information from emergency service agencies;
E.	There needs to be improved power supply and backup technology to maintain telecommunications infrastructure;
F.	There is an opportunity to develop community partnerships for emergency maintenance of telecommunications infrastructure;
G.	There is a need to provide greater digital capacity during peak periods that maintains an effective level of service to the community and enhances the East Gippsland visitor experience that builds the East Gippsland tourism economy;
H.	That there are major difficulties for businesses in accessing mobile networks and the internet due to geographic coverage issues such as blackspots, weak signal strength, and reliance on satellite internet in many areas. Constriction of services due to network capacity in peak periods. Inability to use required digital business reporting systems;
I.	That there are more opportunities within communities for digital business development and networking, regardless of location;
J.	That there are new opportunities to develop community digital hubs and co-working centres that support the turn towards more flexible working systems;
K.	That there are service business opportunities for small/social enterprises to support digital and connectivity optimisation for individuals, businesses and communities;
L.	That East Gippsland needs greater opportunities for agricultural/primary industry use of the Internet of Things (IoT) by improving the digital knowledge of those industries and by providing more reliable and cost-effective connectivity;
M.	That connectivity must be accessible to all communities to comply with the increased usage of digital platforms for information between communities and government, especially for business and Centrelink reporting.
N.	That to safeguard the wellbeing of communities and health professionals in rural and remote areas there is acknowledgement of the enhanced connectivity needed to support complex telehealth technology;
O.	That there are structurally disadvantaged groups within the East Gippsland community that require action to be taken to address their needs and their often-poor experiences with digital connectivity and its associated technologies.

Introduction

Polis Planning was given the opportunity to work with the East Gippsland Shire Council to consult widely across services and communities to determine their interaction with the telecommunications system, specifically around digital connectivity.
The 'lived experience' of these individuals and organisations is reflected in this report and identifies common and specific themes that highlight the gaps and the priorities for improving connectivity outcomes across the municipality.
The East Gippsland Shire Council requested that the report have three main focusses, described here as specific sectors.

- Geographic and Place Based
- Emergency Management Agencies
- Economic Development -Business, Tourism and Agriculture

After consultations the Report also included another sector for health, education and social service agencies. This was to include connectivity issues that affected the provision of Telehealth into rural and remote communities and the challenges to the delivery of education, especially on-line programs that are delivered by private training organisations located outside the region.

- Multi Sector Agencies

There are also subthemes to each of these communities that the Report examines. For example, the growing trend towards home based business and the Working from Home/Working from Anywhere that has developed since the Covid 19 pandemic, all require consistent and reliable access to online and mobile services.

Understanding the Context of the Consultation

It was appropriate for Polis Planning, during the consultation phase, to reflect on the background to many of the discussions we have had with individuals, service agencies and businesses across the municipality. Understanding the context of responses is key to our evaluation of those conversations and we became increasingly aware of the frustration of those we talked with, especially from those who suffered losses in the devastating disaster of the 2019/2020 fires. The frustration was also historic.
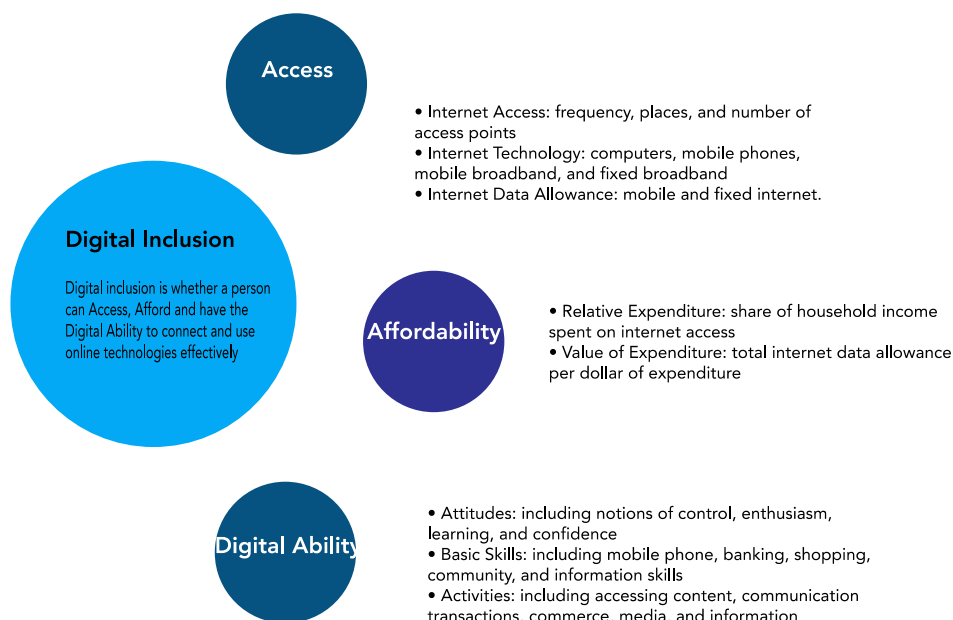
Many of our respondents were angry that the issues that arose from previous bushfires were not adequately resolved to their level of expectations. Institutional bodies had not listened to communities and remained disconnected from each other, seemingly unable to resolve cross sectoral issues. The example often discussed, and recorded in this Report, is the direct relationship between energy suppliers and telecommunications providers and the downstream effects of failures in any contingencies to manage the cumulative effects of power outages on telecommunications.

Many community members across the most affected areas of poor or unstable digital services, had written numerous letters and made representations to local, state, and federal politicians and government departments, over many years. The outcomes of these actions were invariably unhelpful, with blame shifting and the complexity of the digital communications system being common reasons for inaction. Removing the agency of communities who seek to improve their vital communications linkages has left many cynical of any further actions to provide meaningful changes to their situations.

The process which Polis Planning undertook was to provide everyone we consulted with a return of that agency and their right to be heard and to advocate vigorously for their communities.

Principles of Digital Inclusiveness

The principles of the assessment for this project were based around those developed for the Australian Digital Inclusion Index[1]. We believe that the definitions of Digital Inclusion provided by the Index is especially relevant to our Report. It details the conditions under which communities can

Access

• Internet Access: frequency, places, and number of access points
• Internet Technology: computers, mobile phones, mobile broadband, and fixed broadband
• Internet Data Allowance: mobile and fixed internet.

Digital Inclusion

Digital inclusion is whether a person can Access, Afford and have the Digital Ability to connect and use online technologies effectively

Affordability

• Relative Expenditure: share of household income spent on internet access
• Value of Expenditure: total internet data allowance per dollar of expenditure

Digital Ability

• Attitudes: including notions of control, enthusiasm, learning, and confidence
• Basic Skills: including mobile phone, banking, shopping, community, and information skills
• Activities: including accessing content, communication transactions, commerce, media, and information

identify their level of inclusivity in the digital environment, and something they can map over time. Changing any of these indicators will increase the capacity of communities to bridge any digital divide, especially that experienced by the rural, remote, and regional communities of East Gippsland.

Hierarchy of Digital Connectivity Providers

It is obvious that there is a hierarchy of providers in the digital connectivity system in Australia. We summarise them below in order to establish a method for undertaking collaborative planning across the three levels of government, the private telecommunications providers and the community.

Provider	Public/Private/Community	Infrastructure/ Service Provision	Funding Programs
Department of Infrastructure, Transport, Regional Development and Communications	Public (Federal)	Funder Legislator Regulator	• Regional Connectivity Program • Black Spot Telecommunications Funding • Strengthening Telecommunications Against Natural Disasters (STAND)

---

[1] Thomas, J, Barraket, J, Wilson, CK, Holcombe-James, I, Kennedy, J, Rennie, E, Ewing, S, MacDonald, T, 2020, Measuring Australia's Digital Divide: The Australian Digital Inclusion Index 2020, RMIT and Swinburne University of Technology, Melbourne, for Telstra. DOI: https://doi.org/10.25916/5f6eb9949c832

			• Mobile Network Hardening Program • Rapid Response Telecommunications Units
National Broadband Network Company	Private Telco	Service Provider of the National Broadband Network	Regional Co-investment Fund
Telstra	Private Telco	Service Provider	
Optus	Private Telco	Service Provider	
Vodaphone/TPG	Private Telco	Service Provider	
Field Solutions	Private Telco	Infrastructure Provider	
Department of Jobs, Precincts and Regions (DJPR)	Public (State)	Funder/Planner/Advocate	Connecting Victoria
Bushfire Recovery Victoria (BRV)	Public (State)	Funder/Planner/Advocate	Bushfire Recovery Grant
East Gippsland Shire Council	Public (Local Government)	Advocate/Strategist	
East Gippsland Communities	Community	Consumer/Innovator	

Key Priorities for the Improved Provision of Digital Connectivity across East Gippsland

I. Socially Responsible and Inclusive Approach to Digital Connectivity

The approach to planning by telecommunications providers is that, outside the major infrastructure of the national network, especially in rural Australia, each place has different geospatial constraints and advantages. Such a planning approach favours a multi modal solution that is tailored to each separate place, as and when funding and co-funding can be sourced. This process of 'patching' with the expectation that over time the solutions will cover all the constrained sites, which at face value appears to be a responsible action, continues to leave some communities unserved and disadvantaged as they await their time to receive the required access. The details of prioritisation processes and the determinants of the outcomes are rarely communicated with communities, adding to their confusion and frustration.

The supply side constraints on the provision of these patching solutions are determined by a business model that is informed primarily by a service provider's return-on-investment strategies and underpinning from substantial government co-investment. Such a strategy is at odds with the principles by which this Report determines the level of digital inclusivity within the communities of East Gippsland. **It is time to consider the development of licensing service standards that equally privilege the social and economic return on the telecommunication investment**. This is especially relevant to the current restrictions of COVID-19 and its reliance on online participation across the health, employment and education sectors.

One way of ensuring that communities can have collective input and the opportunity to review ongoing digital connectivity changes across East Gippsland, is for a new **East Gippsland Digital Connectivity Working Group**

to be formed that represents communities, service agencies and government. A single collaborative group could operate with a broad East Gippsland wide perspective that reports to agencies and communities on progress towards their expectations of high functioning digital connectivity. It would also advocate a systems approach to planning that ensured all future opportunities are evaluated for maximum benefit to the community.

> *Communities are tired of writing to politicians about internet and mobile services, receiving little in return- promises are made but not kept or forgotten- people just give up.* **Buchan Neighbourhood House**

> *In 2003 the **Gelantipy Bush Nurse Centre Committee** wrote to local politicians to raise the issues of the lack of mobile reception available during the bushfires across East Gippsland, during which their communities were highly impacted. **The same letter "could have been written again"** for Gelantipy and its surrounding communities, **18 years later***.

II.   Responsive to Demographic Shift and the New Work Paradigm

It is also clear that since the Covid-19 pandemic there has been major shifts in how our society functions. One of these changes has seen population migration from large cities to rural and regional areas as a lifestyle choice, resultant from the experiences of urban and peri urban communities during the lockdown restrictions.

> *According to the expert opinion survey, the normalisation of working from home is expected to result in a slight increase in migration from metropolitan to regional areas, indicators of which should also be monitored. This trend is likely to be more pronounced in states like New South Wales and Victoria where regional areas were already recording net population gains before the COVID-19 pandemic*.

Bernard, A et. al. 2020, 'Anticipating the impact of COVID-19 on internal migration', Centre for Population Research Paper, The Australian Government, Canberra)

(Many of the predictions were based on the end of lockdowns and restrictions by the start of 2021, so there has been an underestimation of the migration out of Melbourne.)

Where people move to will be determined by proximity to and access to services which metropolitan communities are now dependent on. This includes digital connectivity as both a social and economic enabler, a facilitator of a transactional society whose lives are built on a sustainable and efficient digital environment. For outer regional communities to benefit from this new migration phenomena, there must be a stronger push towards improving the digital experience that will encourage successful long-term migration into East Gippsland. Building a more decentralised population, no longer reliant on proximity to major city networks, and able to work and study more flexibly (work from home, work from anywhere) will build new, sustainable economic activity and social connections in regional and rural communities, not only for new settlers, but for existing communities, as critical mass builds and new opportunities become more achievable

III.   Supporting the Transition to Online Services

Like the opportunities for growth from in-migration, local communities will be sustained and supported by improved digital connectivity. With the increasing use of online transactions, from government reporting for Centrelink to ordering from the global marketplace and for increasing exposure for East Gippsland products and services to that global marketplace, there is a significant demand for fully functional, connective services. With this available across East Gippsland, young people may be able to study and work without leaving their rural communities, businesses can thrive in the knowledge economy and develop new local, national, and global markets. Working from home or local digital hubs will become a more normal and active part of community life.

This form of regeneration of rural and remote communities will not only build social capital and community capacity but will contribute to local economic development which in turn can

build the Gross Regional Productivity of East Gippsland

I was told that they didn't deliver my census form because they couldn't use google maps to see that there were four houses along our road. How many more houses are missing out because they(ABS) are relying on technology that doesn't work in our area?- **Resident**

IV.   Building Critical Emergency Connectivity in East Gippsland

There are significant impacts of the digital divide for regional, rural, and remote communities that relate to the increased occurrence and severity of natural disaster across East Gippsland. The uneven connectivity across the municipality which begins with issues of access to various degrees, unstable connections through to the recent 2019/2020 bushfire disaster. To quote the Royal Commission into National Natural Disaster Arrangement, in its evaluation of telecommunications during the 2019/2020 bushfires minimal or no service has been highlighted by emergency service members, especially during.

In understanding and undertaking risk assessments, telecommunications providers appear to focus on the impacts to overall volumes of customers (e.g., per cent of total traffic disrupted) and on core networks, rather than on the impacts or duration of outages to specific communities, individuals, or dependent services. Consumers, however, told us that they expect telecommunications providers to understand and mitigate the specific impacts of service outages, particularly extended outages, on those relying on their services. This indicates that telecommunications providers' assessment of risks may not be aligned with consumer expectations and that there is scope for telecommunications providers to review, amend and communicate their risk processes accordingly. (p.237)- **Royal Commission into National Natural Disaster Arrangements**

Although this work is being carried out at a national level it is highly pertinent to this discussion of the impact of poor digital connectivity before, during and after the East Gippsland bushfires; certainly, one of the most severely affected areas, nationally, of the Black Summer fires. During interviews conducted for this Report, both community and the emergency service members within East Gippsland identified their often-dangerous situations where connection to communications, a key element to disaster survival, are disrupted for hours, days and sometimes weeks. The Report recognises that the isolation of communities during disasters is a product of the specific emergency behaviour, but there appears little reason for national and state-based disaster management not to prioritise the maintenance of communications as a primary public safety measure. Although there are current efforts by the Federal government to develop a specific digital emergency service through a proof-of-concept trial with three private carriers, this still does not address the issues of connectivity for the community.

Image from W-Tree

Observations from community and agency discussions that supports improvements in digital communications during and after emergencies, are provided below. It does not identify interviewees but provides examples of their 'lived experiences'

Observations

i. *During the 2019/2020 fires he was without any communications except UHF which was eventually stopped when CFA were active in the area, and he monitored helicopter movements until that was also stopped. From that point on he was completely isolated within the fire.*

ii. *He lives remotely and relies on internet and mobile reception to conduct his business and for personal communications. Lost all communications during the fires as they formed a ring around Tambo Crossing. He had no communications for two weeks.*

iii. *He was one of the few people in the recent fires that had a satellite phone and accompanied a number of EM services in the beginning of the fires, in November 2019. He was not confident of the truthfulness of service providers or their claims and believes that most agencies do not work together to help the community. Too many different communication systems owned by individual departments makes communications during emergencies very difficult.*

iv. *During a call by one resident to the local CFA captain asking for assistance, with her sheds on fire, the signal failed as the power went down at the Telstra facility. "God knows how she survived", he said.*

v. *Like other emergency agencies, departments are more and more moving towards digital information platforms, especially Facebook. When the telecommunications becomes disrupted by power failures the messaging and things like the EMV app. become redundant, the*

department relies on old school techniques-trying to contact people within particular communities to spread info/gain intelligence. "This has been an ongoing feature of the emergencies over a number of years."

vi. *The resident and her family drove six kms. up a bush track in a very remote community to get high enough to get mobile reception. The message from the Emergency Victoria application meant they left immediately, driving 22 kilometres through an area that was soon burnt out as the fire raced through their town. Even now they still need to drive the six kms to get mobile reception.*

These experiences resonate with the following Victorian State government findings.

The emergency management sector's current approach for communicating with the public does not currently result in a consistent, accurate and reasonable understanding across the community of their responsibilities and the role of the sector before, during and after emergencies.

(Inspector General of Emergency Management, Stage 1 Report, 2020)

This was particularly evident during the 2019-20 bushfire season, which saw a number of communities faced without power, telecommunications or access for several days or even weeks. The emergency management sector must anticipate and prepare for these events and have the partnerships in place for rapid and coordinated response when needed. This includes provision of relief, reinstituting services (including reopening of roads) and repatriation of communities as quickly as possible.

*(*Victorian Government Response to the: Review of 10 Years of Reform in Victoria's Emergency Management Sector and Inquiry into the 2019-20 Victorian Fire Season: Phase 1 Report – September 2020. p.10)

V.   Connectivity that Drives Economic and Social Development

Business and Tourism

The need for the Gross Regional Product to continue to grow and benefit the East Gippsland community is a contributing determinant towards their wellbeing and prosperity. It is undeniable that the digital economy and the services and goods that require digital connectivity are driving a major transactional change in society. There are significant benefits to be had for the economy of East Gippsland if the digital system functions at a high degree of efficiency, enabling e-commerce to happen at point of sale and through new digitally inspired and determined businesses. There are consistent issues in East Gippsland with insufficient services at times of peak activity such as summer holidays, major public, and school holidays. This is especially concerning to the accommodation and hospitality industry and to a range of tourism operators working in or proximate to the major tourism destinations. In smaller communities with developing projects in eco-tourism, cycling and hiking, these issues are compounded by the existing difficulties in digital connectivity.
Business implications fall broadly into these categories:

Lack of Service / Coverage

Common issues raised during the consultation period relate to:
- Difficulty in accessing mobile networks and the internet due to geographic coverage issues such as blackspots, weak signal strength, and reliance on satellite internet in many areas.
- Constriction of services due to network capacity in peak periods.

These issues have become exacerbated during Covid 'work from home' protocols particularly where the requirement is to hold online meetings, or to transfer significant data loads. Furthermore it is anticipated that these changes are the 'new normal' with long term impacts over digital access requirements in the regions.

> *I have just set up a business that develops software solutions for renewable energy based off-grid electrification in developing countries. These are the type of businesses that could attract talent and resources to East Gippsland. However, if the infrastructure does not improve, we may have no other option than to move elsewhere.* - Resident

In the past five years there has been a trend for more and varied business activities to migrate solely into the online space. These include much of the statutory requirements such as Single Touch Payroll and Tax reporting, Staff Superannuation, QR code business check ins, as well as access to ongoing Federal and State government Covid and Bushfire relief payments. Businesses have found themselves in a situation where these required activities MUST be completed in the online space. Further complicating access is the trend toward 'multiple factor authentication' of passwords through secondary emails, app confirmations or text messages, as the lag in receiving those additional communications means expiry of the secondary login codes becomes a recurring issue, denying easy access.

Those issues have spilled over into 'commercial activities' such as banking and access to financial services and online payments through EFTPOS, or BPAY. Dwindling numbers of physical bank branches or agencies have migrated much of this activity online, where remote or poorly serviced locations now struggle to access commercial banking services in a fast and secure manner. Peak period network congestion has been raised in our discussions with business groups as one of the biggest frustrations for businesses in the resort towns across the shire. Welcome visitor influxes strain available network capacity, impacting upon functions such as EFTPOS payment systems and electronic point of sale systems that exist in the mobile network and online space.

Businesses report delays in EFTPOS processing that regularly slows or even interrupts customer transaction processing. This is reported as a particular problem in hospitality businesses where there is a constant requirement for rapid turnover of transactions.

Again this issue has become exacerbated in the Covid-19 trading environment where cashless transaction rates have soared. During our consultations many businesses have reported a threefold increase in electronic payments over cash.

> *"When school finishes, I can't even use my EFTPOS because the network gets maxxed out"* – Marlo Business Owner

Reliable, fast internet connections are increasingly seen as a basic requirement for accommodation houses, camping areas and resorts. However, in several of the identified locations in this report accommodation and hospitality businesses struggle to provide this service. Economic uplift post bushfires and Covid-19 is limited by lack of digital service provision to the very areas it is most needed. Additionally these are not locations typically thought of as 'remote'.

> *"We had people checking in, who when they found out there was no internet just told us they were leaving to stay somewhere else"* – Nicholson Accommodation Owner

Cost and Value for Money impacts

Business also reports that the cost of service is also higher in poor service areas. Increased hardware provision is typically required to receive mobile telephone and internet signals. This can be satellite installations, antennae and mobile signal booster systems typically costing between $1500 and several thousand dollars to install.

"Cost per Gb" is also higher, especially for satellite users, with the added issue of extreme limitations on high speed content within available plans, further reducing functionality of the service and value for

money as opposed to that received in metro or larger centres.

Currently there is little or no support available for business in remote areas to install equipment and level up the playing field in terms of cost to use.

Agriculture

There are also substantial gains to be had in the agriculture sector. The Internet of Things (IoT) provides a range of technologies, and access to new software programs, that have far-reaching productivity and labour benefits to farmers and growers across East Gippsland. Where some producers are paying $17,000 per annum for internet/mobile services there are still issues of consistency and reliability of those services. For these and other producers the economic benefits and development opportunities are decreased where digital services are unable to maintain reliability. That is, they are not fulfilling the Reports 'inclusivity' criteria of accessibility and affordability. All producers that replied to our requests to comment have agreed that technology is in their future. From tagging sheep to oversight of breeding programs, water tank monitoring, fertilisation, and irrigation, the IoT has substantial benefits to agricultural sustainability and profitability. The contribution to local and East Gippsland economic growth can be substantial and should not be impaired by insufficient and unaffordable, digital connectivity and services.

Recent studies by East Gippsland Shire's Economic Development Team has shown that 70% of surveyed farmers considered communications connectivity important or very important to their business and 66% stated that they had sought training or advice on digital technology. There is a clear understanding from those surveyed of the the power of digital connectivity to drive new and more labour-saving productivity gains, into the future.

Education and Vocational Education and Training (VET)

The integration of digital learning into mainstream education is well accepted and, in some sectors, provides much of the learning materials and interaction between teachers and students. This is true for all of the external registered training organisations (RTO) and during the COVID-19 pandemic when most students were tutored at home, with a variety of interactions with their subjects and teachers provided through online learning and the use of emails. Evidence gathered during this time showed a number of challenges faced by students and their families.

Teaching and learning challenges:
- The difficulty of teaching practical subjects in an online environment, given that VET is inherently designed for applied learning.
- Assessment of subjects that require observing practical skills.
- Some students found online learning overly challenging, and schools found it difficult to maintain these students' engagement.
- Parents struggled to support VET Delivered to Secondary Students (VETDSS) learning.

Technical challenges:
- Accessing RTO portals was an issue – with no technical support to assist students when problems arose. For example, some students did not have email set up on their laptops.
- Internet access unreliable for rural students who rely on satellite internet (and Dept. Education provided dongles do not work for satellite internet)
- Home internet data availability limited as a result of heavy usage creating funding difficulties for families prioritising household spending, especially where parents are unemployed.

Health and Support Services

There has been an increasing drive from state government for regional, rural and remote health services to provide access to Telehealth for their clients. The demands of the program, its levels of security and the need for real time streaming require access to effective and efficient internet and mobile services. Remote Bush Nurse Centres in East Gippsland are currently trialling this technology but there is little hope of success due to the lack of appropriate or existing connectivity.

> *As Bush Nurses we have specific medications that we can administer to people in an emergency situation, but we need to have approval from authorisers through a digital connection; without connectivity we can't get that approval*- Bush Nurse

VI.   Improving Connectivity and Digital Literacy

During all consultations and with reference to much of the research available on digital connectivity there have been comment on the third of the digital inclusion priorities- **Digital Activity**. This is composed of three areas.
- **Attitude**s: including notions of control, enthusiasm, learning, and confidence
- **Basic Skills**: including mobile phone, banking, shopping, community, and information skills
- **Activities**: including accessing content, communication, transactions, commerce, media, and information.

There was strong evidence from digital service providers, communities, and advocates that they were equally interested in improving both connectivity literacy and digital literacy. By improving the ability of communities to understand the capacities and limitations of technology services and programs, the effective use of equipment and how to maximise and protect their digital presence, the improvements being requested in digital connectivity will have the maximum benefit to East Gippsland's economic and social capital. At its most basic scale, digital literacy is often linked to the functional literacy levels of community members, whilst at a more complex level, defines the ability of businesses and producers to articulate their technology needs and make informed decisions on

technology costs and benefits. Subscription services in agricultural programs are an example of the marketing of many of these technologies and need to be clearly understood and costed to be efficient for end users. The growing transition to digital platforms for government and business transactions with communities as discussed above will also require an improved level of digital literacy, that is, the improved understanding of individuals and businesses on how to access and successfully work with new applications. This need for improved learning is another imperative for the Report and will require a range of flexibly delivered, digital learning opportunities across East Gippsland, that purposely target a more effective and informed digital experience.

Learning online, paradoxically, cannot be achieved with insufficient digital connectivity; the efforts
would be wasteful and would only increase community frustration.

The Report also sees new business opportunities that provide ongoing learning and technical support. We recommend that Council provide development opportunities for local contractors and small start-ups to provide advisory and connectivity services into the community. This would also provide a more targeted and place-based response to building connectivity literacy amongst communities and agencies.

Consultation Methodology/ Research

Because of the restrictions on community gatherings the Report is based on telephone and in person interviews carried out by Polis Planning.

- Community members (n=56).
- Emergency Service Agencies (n=8)
- Health and Community Services (n= 5)
- Business and Tourism Associations (n=8)
- Businesses (n=35)
- East Gippsland Shire Council
- Department of Jobs, Precincts and Regions
- Department of Infrastructure, Transport, Regional Development and Communications
- National Broadband Network Co.
- Telstra
- Field Solutions
- Optus
- Better Internet for Rural, Regional and Remote Australia

These were semi-structured interviews using a conversation style of questioning on the three digital inclusivity topics of the Report, namely, accessibility, affordability and digital and connectivity literacy.
 Local surveys conducted by East Gippsland Shire Place Managers in the Buchan District

and the Goongerah Tubbut District provided further information that was placed into the database.
 An informal 'listening post' was carried out through the 'Bloody Good Coffee' café over the consultation period that led to interesting insights and contacts (n=120)
 All responses were added into a log that captured the information and were only identified by location. No personal data was used from the information gathered through the consultation process.

I.   Analysing the Consultation Responses- developing an Evidence Base

The consultation has revealed many perspectives on the issues of Digital Connectivity. In providing a report on these perspectives we have constructed a table of responses (Appendix 1 p.27) that provides an evidence base, guided by the key elements of Digital Inclusion, and the sectors identified in the original brief from Council. The key issues are listed here again with the following table identifying the detail of those conversations. This not only records the consultation outcomes but provides communities and agencies with a sense of ownership over the issues that were uncovered.

II.   Key Issues Identified

A.   There needs to be increased connectivity access for rural and remote areas including more and better placed infrastructure;

B.   Telecommunications infrastructure needs to be better protected (hardened) against fire/storm damage;

C.   That in line with digital government communications practice it is critical for emergency services to have improved digital access to communities during emergency situations;

D.   That it is critical to public safety that communities have improved digital access to emergency information from emergency service agencies;

E.   There needs to be improved power supply and backup technology to maintain telecommunications infrastructure;

F.   There is an opportunity to develop community partnerships for emergency maintenance of telecommunications infrastructure;

G.   There is a need to provide greater digital capacity during peak periods that maintains an effective level of service to the community and enhances the East Gippsland visitor experience that builds the East Gippsland tourism economy;

H.   That there are major difficulties for businesses in accessing mobile networks and the internet due to geographic coverage issues such as blackspots, weak signal strength, and reliance on satellite internet in many areas. Constriction of services due to network capacity in peak periods. Inability to use required digital business reporting systems;

I.   That there are more opportunities within communities for digital business development and networking, regardless of location;

J.   That there are new opportunities to develop community digital hubs and co-working centres that support the turn towards more flexible working systems;

K.   That there are service business opportunities for small/social enterprises to support digital and connectivity optimisation for individuals, businesses and communities;

L.   That East Gippsland needs greater opportunities for agricultural/primary industry use of the Internet of Things (IoT) by improving the digital knowledge of those industries and by providing more reliable and cost-effective connectivity;

M.   That connectivity must be accessible to all communities to comply with the increased usage of digital platforms for information between communities and government, especially for business and Centrelink reporting.

N.   That to safeguard the wellbeing of communities and health professionals in rural and remote areas there is acknowledgement of the enhanced connectivity needed to support complex telehealth technology;

O.   That there are structurally disadvantaged groups within the East Gippsland community that require action to be taken to address their needs and their often-poor experiences with digital connectivity and its associated technologies.

Appendix 1 : Examples of Consultation Responses

Inclusivity Theme	Geographic Communities
Accessibility	I was informed by Telstra that I was not able to be supplied either ADSL or Broadband services. -Buchan
	They have a very patchy service and use domestic type repeaters to improve their signal. The services all went down during the fires when backup batteries failed.-Ensay
	The area was heavily impacted by the bushfires of 2019/20 and the small community was unable to receive mobile signal. Parts of the area have no coverage at all-W-Tree
	Resident gets a weak signal at his house nearby to the CFA and the community hall. It is not sufficient for EM apps. During the bushfire had to find signal where possible to contact family. The Community Hall is being renovated to ensure access to comms and safety for the community with batteries and AV equipment, but the issue is still how strong the signal is- Clifton Creek
	Lag with the NBN during peak times e.g., after school, weekends, holidays-Buchan
	The issues of more remote areas such as Anglers Rest, Goongerah etc was raised with discussion on the Telstra Go Repeater that boosts signal strength as a good option for homeowners. There is also the opportunity for people to use Wi-Fi calling on their mobile phones (something that not everybody knows about)- there are numerous website that explain how to do this as well as measuring your signal. Another issue is that reseller phones do not always provide the full service offered by Telstra- they can opt in/out to certain services. Consumers should be aware of these issues- Telstra
	Mobile reception very poor on the property-nil at the house- Delegate River Rd
	He believes that there are solutions that are available through carriers like Telstra that are only available during emergencies incl powering up and portable repeaters/towers. He has a landline which works most of the year, barring electrical storms. He is not computer savvy and has little opportunity to connect to information through mobile services. He was not confident of the truthfulness of service providers or their claims and believes that most agencies do not work together to help the community- Brookville
	Very patchy all over the property- Dellicknora
	We had to drive 5 km to a higher spot to get the Vic Emergency App. Left the area as soon as possible. Mobile service is very bad- only just getting satellite but expensive and data runs out quickly.- Combienbar
	We live in a small community which has no or very poor service. During the fires many people had to evacuate, and we lost homes and luckily no lives. Some had no information as to where the fire was or how serious it was. We had six weeks without power after the fires. – Club Terrace

We had satellite phones dropped into the community during the fires but somehow we managed to get some signal into the town. People, including campers were evacuated by boat as the road closed. Recent work on a nearby tower doesn't seem to have changed the reception here, still very weak and I l have boosters to help get reception at home- Tamboon

No mobile phone coverage anywhere near here, and the satellite internet can be very sketchy at times -Goongerah

Very spasmodic -no mobile data at all. Mobile a waste of time. Dropping out/not connecting. No strength at all even with a blue tick phone-Bonang

Mobile tower not working due to power outages and poor battery backup servicing. Landline exchange has similar problems- unacceptable in an emergency. -Bonang

Lost all comms during the fires with a ring around Tambo Crossing. Had no communications for two weeks. Using 3G technology as it has the lowest latency of the Telstra systems (4G,5G) and Sky Muster although at times the latency figure runs to 600-800 m/s -Tambo Crossing

100 kms of road (Omeo Highway) is a long blackspot for mobile reception that the frequency of travellers, especially motorcyclists, along the road has increased significantly since the road to Mitta Mitta and Falls Creek were sealed. No communications during the bushfires and was completely isolated within the fire. The issues with mobile towers were typical to other areas where they became unusable once backup batteries were depleted.-Anglers Rest

During the fires there was no phone, no line, and no battery backup for Telstra infrastructure-no power. Uses off the shelf technology to provide repeaters to boost signal at home. Looking at being an early adopter to Elon Musk's sky train- Sarsfield

At 2.5K to have a repeater in the house there is no other way to receive internet or mobile services. The broken copper wire landline service to his property will not be replaced by Telstra.- Buchan

The local community has raised $10,000 to install their own repeater which is licensed through Telstra, and they are awaiting permission from DELWP to place it on state government land. This is designed to provide better local services and mobile connection to the community.-Anglers Rest

The lack of mobile coverage can be seen as a minor irritation, but there is a more sinister implication. After the bushfire at the end of December in 2019, with mains power loss, and landline telephone lost, and finally power to mobile phone towers lost, with fallen trees blocking the road, my daughter in Bruthen did not know for 4 days whether I was alive or not. I finally established communications with 2 car batteries powering my satellite internet and used a USA based commercial social media company to contact her. Not good for a supposedly 1st world communications country.- Wulgulmerang

Some users in the lower areas in Nungurner or further away in Kalimna West or in gullies, have a patchy or no service and have to use satellite NBN with attendant issues of lower data limits, shaping, and increased 'cost per Gb'. – Nungurner

Service Agencies

We have reception at the centre but are unable to get service when we are doing home visits. Emergencies where we can administer lifesaving drugs requires permission from a clinical source through a mobile connection that is often not available. Telehealth is an important new program but doesn't work without effective internet and mobile services. -Bush Nursing Centre Gelantipy

We hope to establish a program for 'Connecting Well' that resolves the issue of no or poor access to our information website in difficult to reach areas. We are funding our own technology to improve this in 12 places across East Gippsland. We want people to be able to access the information within their communities- Gippsland Lakes Complete Health

There has been a history of consultation that has failed to deliver and letters to politicians that have made no /little change- people are giving up. Community looking to have more control in emergencies (eg running their own relief centre), having a set of satellite phones for emergencies and having public phones free during emergencies. In recent bushfires the community was isolated because of the fires and closed roads and no telecommunications due to failed battery backup when mains power was cut- Buchan Neighbourhood House

Trying to set up a Telehealth Centre in Tubbut and Goongerah but finding little success with funding to provide appropriate facilities and hoping to be able to use existing DoE service from schools that have been recently closed- Mental Health Nurse

Emergency Services

Concerned at the overall lack of connectivity for emergency services especially the planned closing of trunking radio for connection to other EM services such as VicPol. They still receive pager technology for information. Major tourist routes (GAR,Omeo Highway,Falls Creek) have little or no reception for mobile service. Landlines are protected by Telstra as an essential service, but this does not cover the mobile network. That there needed to greater system integration for communications including secondary and primary networks that operate in both emergency and non-emergency systems.- Omeo

There is no reason why communities can't refill generators that support infrastructure when mains power is cut during emergencies and services can't reach their facilities. -Buchan

We want to emphasise the issue of power resourcing during emergencies. Battery backup for telecom towers have power for approximately four hours. EGSC is working with funding provided by federal government to upgrade community halls in order to provide communities places that have basic telecommunications, power and water and places to congregate during emergencies. The STAND project will provide community halls with extra equipment, but they will still rely on satellite provision to run their AV links /Mobile WIFI etc. Where the satellite signal is weak this will impact the viability of the system. -East Gippsland Shire Council

Lost mobile call to local CFA from woman trapped in a burning shed. -God knows how she survived! Lack of battery maintenance and planning at Telstra exchange. No service for days-Bruthen

We rely on digital reception for our call-outs and although we have an improved Digital system it still operates on the existing infrastructure. If that is damaged, as it was in the 2019/2020 fires, we have limited contact with local brigades. -CFA

Several key issues raised; Firstly getting / maintaining power to existing telco infrastructure. This was considered an absolute priority. Idea was raised to have this responsibility sit under the existing CFA brigades, as they have all the required safety training, situational awareness, and sit under the emergency management process currently, so able to know when power generation needs refuelling and to communicate through to all stakeholders once done. Secondly speed up the process of eliminating phone and data blackspots. Many of the locals know where the blackspots are and can mitigate by going to locations, they know they can get reception (although this doesn't solve the issue of when they may need to travel between locations and for emergency services that need to be mobile). However, visitors during busy holiday periods do not know this and this creates major safety issues. Of particular concern for Marlo is the mobile gap between Marlo and Conran and that Marlo is the only port access between Lakes Entrance and Mallacoota, making it strategically important in an emergency.- Marlo

Setting up command centres to manage incidents in rural areas requires access to a digital services- we were lucky that we could get some mobile coverage at the local community centre. Victoria Police

Business and Tourism

Power stability issues, brown outs etc. reasonably common occurrence in Bairnsdale, Bruthen, Paynesville, Metung. Increased impact as more businesses have migrated to VOIP, cloud technologies, where loss of power means no phones as internet goes down.

Telstra network works well in Bairnsdale area, but other networks are poor, so a disconnect when visitors or business moving from the city and cannot get connectivity.

Power stability issues flagged in Bairnsdale and surrounding areas as problematic to business continuity when large files are being transferred and with transition to VOIP and Cloud based technologies. Lack of network service providers in EG noted as a barrier to entry, especially for visiting and relocating business users from metro regions into the shire. -EGMB

One major issue identified straight away is mobile phone and internet connection is extremely difficult in Nicholson, this leads to loss of business in local accommodation when customers discover cannot access internet -BTA

Many of the locals know where the blackspots are and can mitigate by going to locations they know they can get reception (although this doesn't solve the issue of when they may need to travel between locations and for emergency services that need to be mobile). However, visitors during busy holiday periods do not know this and this creates major safety issues. Of particular concern for Marlo is the mobile gap between Marlo and Conran and that Marlo is the only port access between Lakes Entrance and Mallacoota, making it strategically important in an emergency. Thirdly there is a frustration that bandwidth available is insufficient and the system not sufficiently stable to meet even current needs. -BTA

Concept for digital enterprise and innovation hub for Mallacoota. This proposal outlines the possibilities for a digital enterprise and innovation hub that provides a co-working space with appropriate infrastructure, a digital media training and creator space, and an incubator space for growing sustainable digital enterprises. - Mallacoota

	Initial feedback was that bandwidth congestion particularly over peak periods such as holidays, weekends, and summer season, leads to business disruption through slower internet, dropping out of services and failures in payment systems that run through the mobile network, such as eftpos machines. -Lakes Entrance BTA
	There is a frustration that bandwidth available is insufficient and the system not sufficiently stable to meet even current needs. Data speeds are noticeably slower during busy periods, although even fluctuate during other times for no apparent reason. This speed reduction effectively renders the network unusable for substantial periods. Business also struggles with eftpos connectivity which is exacerbated at busy times when it is most needed.-Marlo
	One major issue identified straight away is mobile phone and internet connection is extremely difficult in Nicholson, this leads to loss of business in local accommodation when customers discover cannot access internet,-Nicholson
	Agriculture
	There is a lot of technology trialling going on with different pilot programs being funded by the State government. Access is important as farmers are accessing the internet using satellite connections which are not always efficient. Software compatibility and robustness is also an issue-Farmer
	Farmers need to be sure of what they are subscribing to and what the benefits are to their business.- Producer
	Some farmers aren't convinced it's useful (IoT) because there signals and internet are poor and so cant test it out to see the potential of the savings and productivity benefits- Farmer
Affordability	**Geographic Communities**
	Very angered by the misleading information given to our local people that gets them signed up to unnecessary plans- Lakes Entrance
	Internet and mobile services are barely adequate and become overstretched during peaks in tourist season, considerably more expensive and much slower than the better service people have in the cities.- Goongerah
	Paying good money for nothing-Bonang
	Satellite is very expensive compared to non-satellite- Doesn't work in storms or snow- Bonang
	Internet rates disadvantage rural consumers using Sky Muster and are costly.-Buchan
	Some families struggled with the extra cost of having kids at home using the internet-Teacher
	Everyone is on satellite service for internet....states that this situation means most people have to have multiple accounts for phone, internet services which makes them more expensive. -W-Tree
	Some users in the lower areas in Nungurner or further away in Kalimna West or in gullies, have a patchy or no service and have to use satellite NBN with attendant issues of lower data limits, shaping, and increased 'cost per Gb'. - Nungurner

	Service Agencies	
	We had to pay a lot of money to have NBN connected to our organisation because we couldn't rely on the service provided through the ISP to run the administrative needs of our agency and its onsite and offsite staff.- Lakes Entrance Agency	
	Business and Tourism	
	Other priorities noted include continued elimination of mobile blackspots, speed and connectivity issues around NBN between Bairnsdale and Lake Entrance, and 'cost per Gb' disparity for businesses unable to connect other than through satellite NBN. -EGMB	
	The sentiment is one of paying over the odds for a service that then does not work to a sufficient standard. What is a comparison of $ per Gig, city to country? There is genuine community anger apparent with regard to this.-M&CCBTA	
	Agriculture	
	Some farmers are paying up to $17,000 per year to access and use the IoT	
Digital Activity	**Geographic Communities**	
	Education of users was also discussed with suggestion that there is a need for people to understand the limitations/options for their phones and carriers.	
	Most people do not understand that NBN and Telstra are separate entities and Telstra purchases bandwidth from NBN as a reseller-Telstra	
	Some students didn't know how to set up their email at home to contact schools-Teacher	
	Agriculture	
	It is important that farmers get the best understanding of how the IoT will improve their productivity by learning more about what will be the most productive for their operations -Farmer	